The Builder.

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The Working of the Conciliation Act.

THE Board of Trade have issued their first Report on the working of the Conciliation Act, 1896. It covers the period from the date when the Act came into force, namely, August 7, 1896, to June 30 in the present year.

When the Act was under discussion in Parliament we pointed out that it could do no harm, and might do some good, but that it was difficult to anticipate any great results from it. That opinion seems to be justified by this Report. It has effected some modest and useful work, but its most useful purpose has been to emphasise the principle that disputes ought to be settled by peaceful methods rather than by industrial war. The practical effect has not, we think, been great.

The Act itself enables the Board of Trade, when a difference exists, or is apprehended, between employers and workmen, or between different classes of workmen, to inquire into the cause and circumstances of the difference, or to take such steps as the Board may think expedient to enable the parties to meet under the presidency of a chairman mutually agreed upon or nominated by the Board or by some other person, with a view to the amicable settlement of the difference. Or, again, the Board may, on the application of either party, appoint a person to act as conciliator or may appoint a board of conciliators, or, on the application of both parties, may appoint an arbitrator. For the period already mentioned this section has been employed in the sense that action has been taken or invited in thirty-five cases. In four cases there has been no settlement, though in one of these the dispute was subsequently settled by the parties and some outside individuals, and in six cases the application was declined. One of the other cases is that of the Penrhyn Quarries, in regard to which the official summary is "No settlement, dispute still in progress."* The same result has to be chronicled in regard to the Boot and Shoe Operatives dispute at Norwich. We have, therefore, twelve cases, at least, in which the Act has proved useless. In the other cases the intervention of the Board of Trade has been of use: even without the Act it is probable that some of these disputes would have been practically settled, but it is nevertheless a distinct advantage that there should be some impartial body to which either or both sides can apply with a view to putting an end, by conciliation or arbitration, to a trade dispute.

Among these thirty-five cases we find several of special interest to the readers of this journal. There is a dispute between the bricklayers and plasterers of Newcastle-on-Tyne, which arose out of a long-standing dispute as to the limits of work belonging to the respective trades in respect of the laying of cement flooring. In 1893 the matter was referred to the arbitration of the Tyneside Building Federation, and their decision was that the work belonged to the plasterers, except jobbing builders' repairs in sanitary work, which might be done by either party Difficulties arose, however, in regard to the working out of this award, with the result that the masters locked out both plasterers and bricklayers. The intervention of the Board of Trade had no practical result, but "in March, 1897, at a conference consisting of two architects, two builders, two bricklayers, and two plasterers," the dispute was finally settled. Here we have a case in which both before and after the intervention of the Board there were peaceful arrangements, so that this is a striking instance of the fact that the Act in many instances is of no practical value. Another case arose out of a strike of painters at Middlesbrough. They demanded an advance of one penny per hour, and some alteration in the working rules. On March 22, the General Secretary of the Men's Union asked the Board of Trade to take action. Several interviews subsequently took place between a representative of the Board and the employers and workmen, but no settlement or arbitration was arrived at, and, says the Report, "the dispute has not been settled." Two other cases arose out of disputes in regard to carpenters and joiners at Prescot, in Lancashire. The question was a simple one. The work on which the men were employed was within the Liverpool ten-mile radius, and so was covered by the working rules of the Liverpool district. But these rules were not in force within the Prescot district, to which the men and the master builder belonged. A conference was arranged by the Board of Trade, at which Mr. W. E. Willink, architect, of Liverpool, agreed to preside, and the dispute was settled by an agreement that the master would conform to the rules of the Liverpool district while he was doing work within it. In the last "building" case, that in reference to the masons at Huddersfield, the application made by the mayor on behalf of the Master Masons' Association was declined "as the possibilities of direct negotiation between the parties did not appear to be exhausted, and it did not seem that any useful purpose would be served by appointing a conciliator." This was the right and prudent course; the intervention of a Government Department should be the last resort, and, as we have already said, we consider the good results of the Act to arise not so much from the direct action of the Board, as from the fact that the statute is a direction, so to say, that parties should compose their differences in a friendly manner.

In the case of the carpenters and joiners at the Potteries a joint application was made by masters and men asking the Board to appoint an umpire to determine certain questions on which the parties were unable to agree. "It appears that the men had asked for an advance of wages of 1d. an hour (from 8d. to 9d.) while the employers claimed a reduction of 1d. (from 8d. to 7d.). A further matter to be submitted to the umpire was the amendment of the working rules so far as relates to the number and binding of apprentices. The master-builders complained of the burden imposed on them by the present indentures of apprenticeship, and also that if through discharge of journeymen in slack times they were left with more apprentices in proportion to journeymen than were allowed by the working rules, they would not be permitted by the indentures to discharge their apprentices so as to reduce them to the "recognised proportion." Sir William Markby, a retired Indian Judge, and now, we believe, connected with the University of Oxford, who had previously decided a dispute of bricklayers in the same district, was appointed umpire, and issued his award on April 30, by which he gave the men a

* From a paragraph in our "Miscellaneous" column it will be seen that there is now some hope of the dispute being speedily terminated.

small rise of wages, finding in effect that the claim both of masters and men was unreasonable. It is a little difficult to understand why application could not have been made to Sir W. Markby by the parties in the first instance; but, be that as it may, the Board fulfilled a useful function in being able to nominate an umpire.

We have dealt only with such cases in this report as are in some measure connected with the building trade; there are others of larger and more general importance; on these we do not propose to touch. They show, however, that the Board of Trade has so far acted with discretion and good judgment, and their advice will become more valuable as experience is gained and records preserved of past disputes. Nor can we omit to notice that in some of these disputes members of the architectural profession have exercised useful and, as we suppose, judicial functions. This is as it should be. In many respects architects are well fitted to be arbitrators or umpires in disputes which arise in connexion with building trades. They are familiar with the ways of masters and of men. They are immediately connected with neither side, and they are thus in a position to bring both knowledge and impartiality to bear on any dispute in which they may have to intervene. The Institute of Architects would, we think, be doing useful work if they were to obtain the names of members of the Institute in different parts of England who would be willing to place their services at the disposal of the Board of Trade. In Sir Courtnay Boyle's introductory letter to the Report, he observes that "if the tendency to use the Act grows, the Board of Trade will have to rely more and more on the assistance and service of such gentlemen (referring to those who have acted as arbitrators and umpires) in completing negotiations, the preliminary stages of which may be usefully conducted by the officers of the department." The Institute might well bring their position and knowledge to bear in this matter.

THE INFLUENCE OF MATERIAL ON ARCHITECTURE.

BY BANISTER F. FLETCHER, A.R.I.B.A.

Chapter VII. (*continued*).

Excursus: Bye-paths of Glass, Marble, Terra-cotta, Brick, Wood, and Iron.

So far as internal architecture is concerned the invention of painted glass was perhaps the most beautiful ever made. Neither the painted sculpture and hieroglyphics of the Egyptian temples, the coloured and sculptured slabs of the Assyrian palaces, the paintings of the Greek temples, nor the mosaics and frescoes of the Byzantine and Romanesque periods produced colour effects that can be compared with the brilliancy and the many-tinted splendours of the transparent walls of a Gothic cathedral, alive in its windows, a blaze of glorious colouring. In the north and west of Europe, where this material is the principal mode of decoration, the walls were kept internally as flat as possible, so as to allow the windows to be seen in every direction, while all the mechanical expedients of piers and flying buttresses are placed on the outside to facilitate the introduction of this new material—glass. Even further, when by the grouping of windows and the subsequent formation of mullions and tracery, the entire screen wall between the piers came to be occupied by bright coloured windows, these windows of necessity took the pointed form of the vault, in place of the previous semi-circular; the pointed form having been originally adopted for constructive reasons arising from the progress of the art of vaulting, which was further influenced by the desire for lofty windows to act as frames for the glass.

The influence of marble in Northern and Central Italy caused a divergence from the Northern Gothic type. In Italy the abundant and beautiful coloured marbles induced the elaboration of a plain wall treatment that reduced mouldings to flatness and comparative unimportance as in the cathedrals of Florence, Sienna, and Orvieto, or in such Venetian palaces as the example given in the lithograph, where the architect relies for effect of light and shade on disposition and colour alone. The influence is also seen in Greek and Italian Sculpture, which differs from the rude work of Northern Europe, partaking, as it did, of almost classical purity.

In Byzantium, the pierced lattices of the windows also furnish examples of another beautiful method of marble slab construction. The large windows at St. Sophia are sub-divided by marble posts, between which the pierced lattices make a mere screen. The western windows are similarly pierced out of sheet marble with a meander carved on the bars. The lower part of the window openings are fitted with marble closures, sometimes of translucent *phengites*, through which the light shone. In St. Sophia the architects used bronze formed into panels on a wood frame, and with panel margins of cast bronze, decorated with meanders, frets, and leaf mouldings, delicately modelled in high relief, as an addition to the rich and effective interior.

In the use of terra-cotta and brickwork, especially in Italy, the influence is evident, the plastic state of the material rendered abundance of ornament easy of application, and a smallness of detail followed, which was eminently suited to the material, as, for example, at the Frari Church at Venice and elsewhere (see lithograph).

The treatment of moulded brickwork has never been carried further to perfection than in North Italy during the Gothic and Early Renaissance period, especially in civic buildings. The effect of sublimity is perhaps not to be obtained in so small a material unless used in the broad massive manner of the Romans. On the other hand, there is no beauty of detail or of design on a small scale that may not be obtained by the use of moulded bricks; which, if carefully burnt, are as durable as most kinds of stone.

The Italian use of brickwork was essentially the right one; the details were small and designed with taste, and the effect of variegated colour was relied on instead of depth of shadow—a perfectly legitimate use of light and shade and warmth where small materials are used, and in which stone of different colour is carried systematically in patterns through the design, and gives a special character, as at Verona. A flatness and want of shadow is necessarily characteristic of brick buildings, sufficient projection not being obtainable for cornices; but such can scarcely be deemed a fault in the material. It was, however, always tolerated by the Italians, who allowed the material to express its own capabilities without trying to disturb its architectural function.

In Northern Germany, in the valley of the Elbe, a brick architecture was developed as at Lubeck and the neighbouring cities, which, although not equalling that in the valley of the Po, has that special character belonging properly to the material, although expressed in a somewhat meagre manner.

The influence of wood as a constructive material produced a class of buildings of which Moreton Hall (see lithograph) is a type, and which were erected during the later Middle Ages when abundance of timber was at hand. These buildings well express the functions of the material.

Decorative ironwork has in the past added largely to the character of different periods, and reference need only be made to the Spanish "rejas," rich in their fanciful detail, and sparkling as if fresh from the smith's forge, in a stream of sunlight darting across the dark nave of some Spanish church, to remind one of the liturgic mysticism of the Mediæval periods.

Chapter VIII.

The Renaissance Period: A Period of Upheaval and Destruction. Style Largely Independent of the Influence of Material.

The Renaissance of the fifteenth century in Italy, and of the sixteenth century in other parts of Western Europe, was a period of destruction—a break in that orderly evolution of architecture which is based on the nature and necessities of materials.

In place of such evolution we have the worship of style, that is of the past results of the nature of materials as formulated into systems. Such results were worshipped for their own sake, and applied regardless of the materials of their execution. The designer is revenged for the trials and perplexities of his long subjection to the duress of Nature, and now carries out his design even in the face of the nature of the material he employs

The falsity, however, of this Renaissance school of design is evident when we trace back to the roots the origin of its characteristic features.

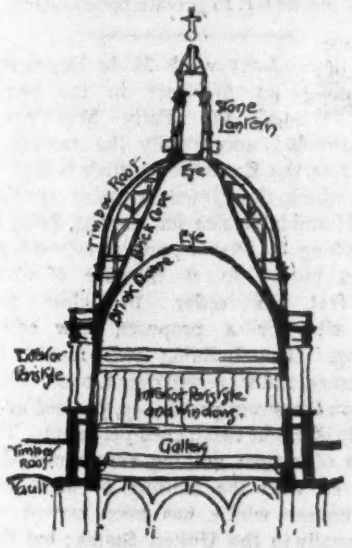
History points out that there is no escape from the influence of material, nor from any feature, however arbitrarily developed subsequently, that had not its origin in the special qualities of some material and structural requirement to which it owes its birth.

In the fifteenth century Italy, the headquarters of the new movement, possessed skilful jewellers and excellent medallists, and it was by their help that the Renaissance commenced and expanded. From their well-known good taste, architects consulted them, and often, indeed, were their pupils, as Ghiberti, Donatello, and Brunellesco. Men, therefore, who were at once painters, sculptors, architects, silversmiths, jewellers, and goldsmiths, only looked, somewhat naturally, at the finished results as the goal to be aimed at, and were not troubled about the means to such an end. Again, the development of the schools of painting had their influence on architecture, and aided the other influences which caused structures to be looked upon as works of art unaffected by materials, instead of being dependent solely for their form and effect on materials. In the same manner, and for the same reasons, the period may be looked on as the age of accessories, in which iron work, gold and silver work, tombs, monuments, altars,

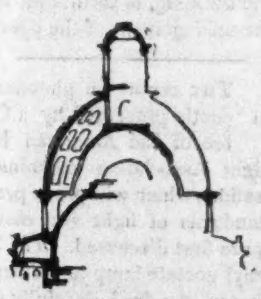
fonts, fountains, were designed in great numbers, and, by the whim and fancifulness of the designer, in large measure affected architecture, which henceforth ceased to be the governing art.

The truth of this proposition may be deduced from the fact that, whereas in previous periods materials, as they arose, were successfully worked into the general progress of architecture to form part of the whole scheme, and to be the creative force of each new style, now materials were scorned or misapplied. Driven outside the pale of art such new materials grow up as Ishmaelites, develop in artless forms, drawing their strength from the stern facts of utility and necessity, which compel their application in structures no longer conventionally recognised as architecture. The Renaissance application of new materials has been in the form of substitutes and shams, and this last result is a natural outcome of the system of design, for if a design of Palladio, say, is a true model of proportion and beauty, it is so as a composition of features or orders, which within certain lines is capable of execution to any scale and must be equally effective also within extreme limits in any materials.

To comply with the canon of absolute beauty is the primary necessity, and indifference to materials is the inevitable consequence. Herein is the only possible defence of falsity of material, and the widespread use of the spurious and the



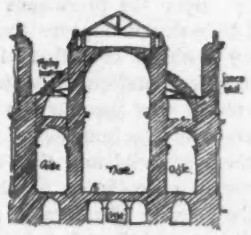
Sketch Section of Dome, St. Paul's.



Sketch Section of Dome, Pantheon, Paris.

sham throughout the Renaissance epoch was not a casual incident nor wholly without reason. In another aspect, the canonised system of design has had a profound influence, for buildings of the common class being incapable, either from expense or from a sense of inappropriateness, of treatment by its formulæ—the Classic orders, &c.—were ruled out of architecture altogether and left to find out some treatment of their own. Thus the greatest success of modern art in architecture has been the rescue of the small villa, house, and cottage from degradation, and this triumph has been achieved through learning from the same procedure of old country buildings the scope and influence of materials.

Speaking generally, we may note that in this period there is an endeavour to reconcile the Gothic and the Roman method of construction, *i.e.*, the body and the dress are one and the same thing constructively, because the architects of these times, attracted by the mere external appearance of ancient Roman art—the only one they had been able to study—and not perceiving that this form was merely an envelope, and not the real structure, continued in the matter of construction to follow the traditions of the



Sketch Section of Nave, St. Paul's.

Middle Ages, which, as before stated, did not separate the structure from the decoration.

The influence of material in the preceding styles is an important factor, as is also the method of working such material. In the Gothic period each stone was finished, moulded, and sculptured in the workshops before being laid—a method which produced skilful and intelligent masons and stone dressers, and obliged the sculptor to make the decoration suit each piece of stone. In the Renaissance period the new mouldings and carvings could be executed with more exactitude and less expense in situ, thenceforward the necessity of making the jointing accord with the various members of the architecture was no longer imperiously felt, and this negligence often resulted in a total want of harmony between the jointing and the architectural features which were continuous, taking no account of the former but cut on the building itself as a mere block. Form is the leading consideration in this epoch; old principles were no longer regarded, and structural system there was none. The division between designer and builder widens and deepens, and the results of this separation will be seen in the next chapter.

NOTES.

The Architects' Congress at Brussels.

THE International Congress of Architects, which is to be held at Brussels on the 28th inst. in connexion with the International Exhibition, promises to be a good gathering, for we already hear that 250 architects of different countries propose attending. Of this number there are fifty representatives from Germany and from France respectively; of other nationalities, we observe that there are three Americans, ten Dutchmen, and eight Englishmen on the preliminary list of members. The general arrangements are in the hands of the "Société Centrale d'Architecture de Belgique," and among the nominations for honorary membership or as vice-presidents are Professor Aitchison, M. Charles Garnier, Mr. Cuypers of Amsterdam, Mr. Stuebben of Cologne (the President of the Amalgamated Society of German Architects), and Messrs. Hinckeldeyn and von der Hude, the Presidents of the two Berlin Architectural Societies. Similar distinctions have also been accorded to the Presidents of the Architectural Societies of St. Petersburg, Amsterdam, and Stockholm. As regards the programme, the proceedings are to commence with a conversazione in the Exchange on the evening of the 28th. On Sunday, the 29th, an Architectural Exhibition will be opened, and two papers are to be read in connexion with it in the forenoon. The first official meeting of the full Congress takes place on the Sunday afternoon, when the King of the Belgians has promised to be present.

Church-row, Hampstead.

THE idea of so perfectly charming an old street as Church-row, Hampstead, being destroyed, as far as its old buildings are concerned, for the sake of erecting more paying structures of a modern builder's type on the site, is certainly enough to make us wonder where this kind of thing is to stop, and whether we are to end by having every bit of old London demolished at the bid of the building speculator. At the same time it is no use pretending that we can have any right to prevent an owner pulling down what he does not care for, because we like it, unless picturesque streets could be scheduled under a protective Act of Parliament. Failing this, the National Trust, which has no powers of compulsion but only of persuasion and purchase, proposes to purchase the street and preserve it in that way. It is gratifying to see that this newly formed Society seems really to mean business, and if it can save Church-row for us we shall be only too grateful; but how long can such efforts be continued? And will not the action of the National Trust almost tempt money-loving persons who own interesting properties to threaten to pull them down, in order to draw the National Trust purse-strings? It seems only too likely—so corrupt is unregenerate man. The best we can really do, perhaps, is to try to establish a degree of public feeling on the subject which would lead to a man feeling it a disgrace to destroy a fine street or building for the sake of an addition to his income. Some of us feel like that now; but it is to be feared we are rather a small minority.

Church-row in Past Times.

IN former days, Church-row was a popular resort for the evening promenade of visitors to the wells; it is contemporary with the parish church of St. John (to which it forms a fine approach), as rebuilt by Saunderson, in 1745-7, after the designs of Flitcroft, who lived in Montague-grove, close by.* Many of the local celebrities lived in Church-row: amongst them being Mrs. Barbauld, and her niece Lucy Aikin; T. Park, the youthful historian of the parish; J. R. Herbert, R.A.; and the Abbé Morel, at Oriel House, where he held services until the building of St. Mary's Roman Catholic Church, 1815-6, in Holly-place. The burial ground at the Row's west end, and extending northwards along Holly-place, was opened in 1812.

* The copper-covered spire was added in 1784, and the chancel at the west end in 1878. A view of the old church, by Chas. Heath, after Hollar, will be found in Park's "Hampstead."

Jubilee Trades and Inventions Exhibition.

An "East London Diamond Jubilee Trades and Inventions Exhibition" is to be opened at the People's Palace in October. It will cover a great variety of work, the sections being proposed to include the following subjects:—Building, Architecture, Joinery, &c.; Shipbuilding and Engineering; Electrical and other Lighting; Textiles and Clothing; Food and Confectionery; Toys, Fancy Goods, and Toilet Requisites; Gold and Silver Work, Clocks and Jewellery; Pottery, Glass, &c.; Furniture and Decoration; Printing, Publishing, Bookbinding, &c.; Musical Instruments; Boots, Shoes, and Leather Goods; Matchmaking; Brush, Basket, and Cane Work; Brass and Metal Work, Cutlery, and Iron Work. No charge is to be made for space, and exhibitors will be put to no expense beyond that of carriage to and from the entrance to the building, the promoters undertaking the reception of the goods and placing them on stands, &c. The Secretary, Mr. C. E. Osborn, writes:—"Many interesting and useful inventions have been brought to light during her Majesty's reign, and it is hoped that the artisan class will largely contribute to make this effort a success. No pains will be spared on the part of Mr. A. F. Hills and the Executive Committee to make the forthcoming exhibition one of real utility to the British artisan. A large number of medals of gold, silver, and bronze will be offered." Inquiries can be addressed to the Secretary at the People's Palace, Mile-end.

The Greek-street Church.

There seems likely to be some litigation between the London County Council and the vicar of the English Church in Greek-street, Soho. One thing is clear: that part of the church requires repair. The County Council require that work to be done and the vicar says he has no funds, and is not legally liable for the cost of the work. We do not propose to enter into the legal question, for it is certain that if there are no funds available for the repair of this church, an appeal should be made for the purpose to the Churchmen of London. To stand on legal right under such circumstances is foolish. Here is a church which needs repair, and whether the vicar is the person who should be served with the notices under the London Building Act may be interesting to lawyers. The ordinary individual, who is neither a lawyer nor a clergyman, will rightly consider that the question should never be allowed to drift into the law courts. The vicar is the person who, in popular estimation, should raise funds for the repair of the church. It is being done by vicars all over England every day: whether they are legally bound to do so is wisely put on one side.

Aldershot in the Camping Season.

At a time when public attention is to a great extent directed to military movements at Aldershot, it is pleasant to be able to commend the excellence of the accommodation provided in the new barracks, which are a very great improvement on the insanitary huts and the dangerous hovels in which our troops used to be housed when they were not under canvas. For all this, there is room yet for improvement, both in the reduction of the number of standing camps, and the better arrangement of many of the camping grounds. It seems inadvisable that the latrine system should be depended on so much during a hot season like the present one, and that there should be no proper sewer system and good lavatory accommodation for the camping grounds. It is entirely a wrong principle to believe that the roughing of camp life is in any way more useful by the omission of improved sanitary arrangements, and when we have as many as 35,000 or 40,000 troops concentrated in a small area, it would be well to minimise the stenches which mark the vicinity of some of the camps—more especially those that have not the benefit of any cover from trees or shrubbery. And it would certainly also not affect the usefulness of Aldershot if the arrangements for drinking water were better.

Sanitary Condition of Chichester.

From Dr. Bulstrode's report to the Local Government Board upon the prevalence of enteric fever at Chichester it appears that the unsatisfactory sanitary condition of the city arises mainly from defects in water supply. It is mentioned that the town is traversed by the Lavant and by branches of this river, some of them artificial, and that there is a certain amount of pollution of the stream through the turning of refuse of the worst kind into it here and there, but that this does not prevail to a very great extent. On the other hand, water supply, partly from the Chichester Waterworks Company and partly from private wells, shows some of the worst faults constantly found in more rural neighbourhoods. The wells are of the kind known as "shallow"; *i.e.*, they are not sunk through any impermeable stratum, but consist of excavations sunk in the gravel overlying clay. These wells are dry-steined, and thus are but imperfectly protected against filth soaking through the soil. Many of them are found but a little removed from non-watertight privies and cesspools, to which reference will shortly be made, and the water contained in them is in danger of becoming fouled by infiltration of cesspool or privy contents; indeed, on chemical examination of the water, many of them have been pronounced highly polluted. Excrement is disposed of partly by means of a recently-constructed sewer system, partly by means of privy cesspits, which are capacious receptacles situated in the curtilages of the houses, lined mostly with brick, but not in such a manner as to render them watertight. Over these are erected commonplace privy structures, often much dilapidated. The cesspits, too, near the houses which they serve, are often within a few feet of the well from which the drinking water of households is derived. The emptying of these cesspits is left to the owner, and in one case the last emptying was so long since that there was no recollection of it. The Report adds, what is perhaps the more serious part of the whole matter, that the contents of these cesspools must be gradually permeating the subsoil of Chichester.

Insanitary Conditions in Truro.

According to the last monthly Report of the Sanitary Committee of the Cornwall County Council, typhoid fever has risen from six cases and one death in June to fifteen cases and four deaths in July, and Truro City contributes seven out of the fifteen cases. The outbreak occurred in a very poor neighbourhood, which seems not to have received proper sanitary inspection. Tub closets are in use which, if not regularly emptied and attended to, will sooner or later produce an epidemic of infectious disease. The Report says, "Such insanitary conditions as have for a long time past prevailed in Moresk-road are certainly not creditable to the City Council, who are the guardians of the public health. The pump from which the people in that locality obtain their supply of drinking water is subjected to two sources of pollution, one from the imperfect state of the drainage, the other from persons taking water from an adjoining stream (which is not much better than an open sewer)."

Drinking Troughs for Horses.

An appeal has recently been published by the useful society which collects funds for the purpose of supplying drinking troughs for horses in London for money to carry on their work. The question must be asked why the water companies should not be legally bound to supply troughs and water at specified places in the streets. In hot weather great distress is caused to horses by the difficulty of getting water in the streets. If the water supply of London were not in the hands of private individuals no doubt there would be a proper supply of water for horses which are employed in the streets. It is to be hoped that some member of Parliament will next session take up the question. The supply of troughs and water should not be left to private benevolence.

Moving a Building in Paris.

Last week M. de Dammartin, an architect in the service of the Paris Municipality, superintended successfully the moving of a building, the Ecole Communale in Rue de Patay, which, though only a timber erection, was of formidable size for moving, being 84 mètres long by 18 wide, and 11 mètres high. It was moved to a distance of about fifty feet, in order to clear part of a site for a proposed new school building. The building was moved by windlasses, and traversed over 140 rollers laid down on the street previously, proceeding at the rate of about two inches per minute. The feat is of course nothing very remarkable compared with the shifting of stone and brick houses which has been carried out occasionally in the United States; but that it was accomplished, as we are informed, without breaking a window or stopping the clocks in the building, is creditable to those who had the management of the operation.

Glow Lamps.

The report on glow-lamps recently presented by a Committee of the American National Electric Light Association contains many novel suggestions which will prove practically useful. Standards of light and methods of photometry are first discussed. The Hefner-Alteneck amyl acetate lamp is recommended as the ultimate standard, carefully standardised glow-lamps being used as standards in everyday work. This is in accordance with common English practice, but when the greatest accuracy is required the Dibdin 10 c.-p. standard is preferable. The candle-power of a glow-lamp is ordinarily measured in a horizontal plane round the bulb, the lamp being placed vertically. This leads to manufacturers making lamps which produce a good illumination in their equatorial

plane and throw little light either up or down. To obviate this defect, the Committee recommend that when the candle-power of lamps is measured they should be inclined at an angle of 45 deg. to the vertical. Also to avoid the trouble of taking the candle-power in several positions and taking the mean, they suggest that the lamp be made to rotate round its axis at the rate of two or three turns per second whilst the test is going on. Another excellent suggestion is that the candle-power should not be measured accurately, but that it should be merely seen whether it lies between certain limits or not—a very much simpler operation. For example, the candle-power of a 16 c.-p. lamp ought to lie between 15 and 17; so that the photometer screen is only placed in two positions, and a glance is sufficient to show if the lamp lies between the required limits. The life, power consumed, and variation of candle-power with life, are wisely left to take care of themselves, as the object of the Committee was merely to give a simple and rapid method of testing that will be useful commercially.

Electric Wiring.

THE use of solid drawn steel pipes as conduits for the electric wires in house lighting is extending and is the practice recommended by many consulting electricians. The little extra expense as compared with wood casing is more than counterbalanced by the greater security and convenience of the conduit system. A question which has been considerably discussed lately is whether the inside of the steel pipe should be insulated or not. Of course, insulated pipe is dearer than plain pipe; still, as the difference between the prices is only a small fraction of the total cost this has no great weight when we consider the effect on the whole installation. The extra advantages claimed for the insulated pipe are, that it prevents abrasion of the cables on drawing in, that it is an additional safe guard against leakage, and that no moisture due to condensation collects inside. With the smooth-bore plain steel pipes that are now used we fail to see that there is much greater risk of abrasion than with the insulated pipes. By using good cables the leakage can easily be made negligable, and the extra safety provided by having a bitumenised or wooden lining to the pipes is very small. We have never heard of any trouble arising from condensation in plain steel piping, and as it has been used now for five or six years, it has stood a fair practical test. The only possible way for moisture to get inside would be by capillary action along the covering of the wires, and this would be just the same whether the conduit were insulated or not. On the whole we think that those interested in insulated tubing have not yet made out their case against plain tubing.

York House, Twickenham.

WE hear that the residents of Twickenham, and others—including some eminent artists—have agreed to petition the Duc d'Orleans to desist from one alteration he has begun at York House. Many of our readers will remember what a pretty prospect across the river is obtained from the high-road (leading to the church) as it traverses York House grounds, whereof a narrow slip lies between the road and the river. The low hedge between the road and the garden slip is, it seems, to be replaced, by the Duke's orders, with a high wall that will quite intercept the view. The house was purchased by the late Duc d'Aumale for his son on the occasion of the latter's marriage; having previously been occupied by the Comte de Paris. It is said that the property, *olim* York Farm, was given to Lord Clarendon by Charles II. upon the public announcement of the Duke of York's marriage to Lady Anne Hyde, and then became the residence of his son-in-law, whose daughters, Mary and Anne, were born in the present house. It subsequently formed the home of Dr. Cleaver, Archbishop of Dublin, and in 1817 was bought by the Hon. Mrs. Damer, to whom Walpole had bequeathed a life-interest in Strawberry Hill. Mrs. Damer, who carved the two heads of Isis and Thames, on Henley Bridge, lived at York House until her death in 1828.

THE ARCHITECTURAL ASSOCIATION EXCURSION, LANCASTER.*

Wednesday.

THE starting-point of the day's drive being on this occasion Carnforth, a short railway journey had to be made from Lancaster. On the way to the first point of destination, Borwick Hall, rain was encountered, and showers may be said to have been the most pronounced feature of the day during the exploration of the Valley of the Kent. Borwick Hall, of which a sketch was given in our issue of last week (page 128 *ante*), looks now very different from the appearance it must have borne when Charles II. visited it in 1651, when his troops encamped near it before the battle of Worcester, the greater part of the interior being now no more than a collection of bare and empty panelled rooms. The plan and appearance of the house suggest that the existing building grew up as a manor house or mansion round an earlier "peel" tower, which is very clearly marked in the design both on the plan and elevation. The present house was erected by William Bindloss, a wealthy weaver of Kendal in 1593, the builder being, as appears from an inscription at the top of the stair, "Alixander Brinsmead, mason, 1595." This stair, by the way, is an admirable practical type, resulting from a compromise between the mediæval turret stair and the Renaissance model. Around a central massive pier, 3 ft. by 2 ft. 3 in., are short flights of four and three risers respectively, with square quarter landings. Owing to the showery nature of the day, a slight divergence from the programme was made, luncheon being taken in the old panelled hall of Borwick, instead of in the open air as originally intended between there and Beetham Church, so that plenty of time was allowed for studying and sketching, the water-colourists particularly being highly pleased, especially by the very picturesque grouping of the back entrance of the house and the small portion of the offices of the original mansion now used as a farm-house. A few transient gleams of sunshine gave them the opportunity to put in the shadows and brighten up the sketches to an extent that the general character of the day hardly seemed to warrant. Although the house, as appears from the date on the stair, was mainly built in 1595, considerable additions were made in 1650, at which time the entrance lodge shown in our illustrations last week, and the balustraded terrace and other parts, were erected. The picturesqueness of the group of buildings is considerably enhanced by the very complete and extensive range of farm buildings coeval with the palmy days of the manor. As with many other buildings of this part of England, the walls are finished with roughcast, the quoins and dressings of doors and windows, gables and chimneys, being in cut stone.

Through several heavy showers the excursionists drove from Borwick Hall to Beetham Church, passing on the way, without stopping, the ruins of Beetham Manor House, formerly fortified and based upon a "peel" tower. The church at Beetham, dedicated to St. Michael, has, as shown in our illustration of last week, a tower of the type characteristic of the district, as at Sedbergh and other examples. There are some parts of the church dating back to Norman times, the south arcade of the nave being of the Transitional period, and the south door even earlier; but the greater part of the building as it stands is of fifteenth century work, as is evidenced by the detail of the north arcade, the aisles, and clearstory There are many monuments in the church, some particularly interesting, as that of Sir Thomas de Beetham and his lady, although the effigies are much mutilated. The glass in the windows, both modern and ancient, is well worth seeing.

With some more showers the party, on leaving Beetham Church, drove on to Levens Hall, celebrated for its formal garden, which was laid out by Beaumont, the designer of Hampton Court Gardens, and which, with its numerous fantastically-cut yews, hollies, and other trees, is an excellent example of topiary art carried to the verge of absurdity. The house, an ancient seat of a branch of the Howard family, though dating back to the time of Henry III., has been much altered subsequently and adorned richly in the seventeenth century with panelling and plaster work, carved oak chimney pieces, and doorways. A curious detail is the prismoidal arrangement of the quarried glazing, apparently following ancient precedent, though for the most part restored. Unfortunately, the lady tenant being engaged in receiving visitors it did not suit her convenience for the members of the party to explore further the many beauties of the interior of the house, with its furniture, tapestry, and pictures, than the entrance hall. This indeed is very charming, and deepened the regret of the visitors that they could not see more. As in the case of Borwick and Beetham, the plan of Levens Hall again suggests the foundation of a "peel" tower as the basis on which the house has been superposed.

Failing the complete inspection of the house, the stables received a considerable share of the visitors' attention, possessing, as they do, some uncommon points of interest, notably the old stall divisions, with a richly-moulded cornice above the oak posts, curiously not carried up to the ceiling.

Driving back to Carnforth, a slight detour was made through the beautiful park of Dallam Tower, where the grand beeches, the pretty river Beetha, and the fine collection of red deer, even more than the mansion (built in 1720), fully justified the addition to the programme. Arrived at Carnforth, the railway was again utilised to take the party back to their headquarters at Lancaster.

Thursday.

To extend the basis of the day's operations the railway was again employed, the train being taken to Preston, where carriages were provided, in which the excursionists drove to Blackburn and back to Preston, on the outward journey taking the new road between these towns, and returning by the old road. Some showers were encountered, but not sufficient to damp the enthusiasm of the excursionists, by this time become accustomed to the vagaries of Lancashire weather. Driving through Preston, the Roman Catholic Church, the Town Hall, and the magnificent Harris Institute were noted.

The first halt was made at Samlesbury Hall, the only example of half-timber work seen during the week, and the character of whose treatment is seen in the illustration given by us last week, which shows the bay window of the hall with dormer over, as well as the manner in which the panels are finished between the timbering, and the characteristic treatment of the oriel windows. On the side towards the road the windows are executed in stonework, with traceried lights, mullions, and transomes. The oldest part of the house is the hall, built in the time of Edward III., with a fine open timbered roof of very massive scantlings. Considerable additions and restorations were made in the reign of Henry VIII., to which period the bulk of the existing work belongs, but the sham minstrel gallery, which bears date 1532, has within quite recent times been inserted.

Proceeding to Blackburn, the short time before luncheon, at the "Old Bull Hotel," was spent by most of the party in a visit to the Free Library, one of the earliest in England, erected

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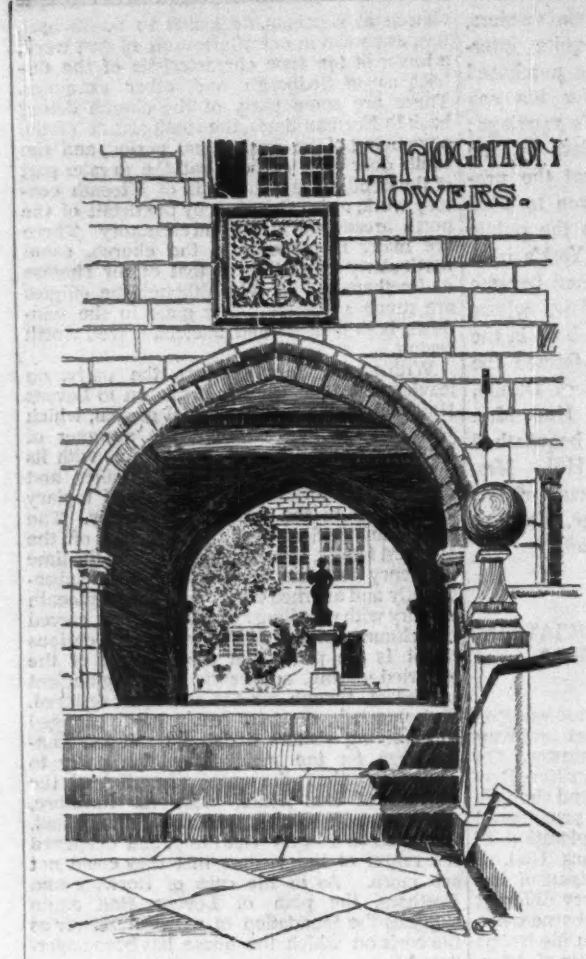
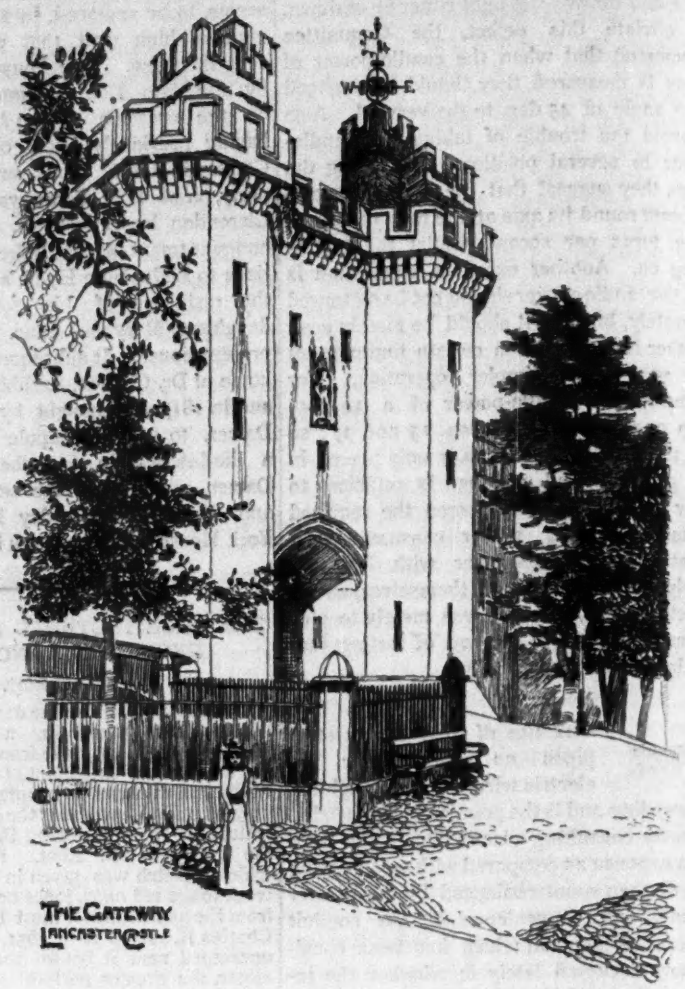
* Continued from last week, page 129.





from the designs of Messrs. Woodzell and Collcutt. It being "Blackburn week," most of the shops were shut and the town was even less interesting than usual.

After leaving Blackburn, the first stop on the way back to Preston was at Livesey Hall, three miles from Blackburn. Livesey is an interesting example of a small manor house, stone-built, on the usual seventeenth-century E plan, and appears to have been erected at three periods (1608, 1666, and 1689), if the date-stones are to be believed, although the plan and detail suggest that the house was built at one date and the stones are insets. Until about ten years ago the house was in a fair state of preservation, but is now almost wholly a ruin, a small part only being still occupied as a farm house. Sufficient, however, was found in the detail and grouping to fully occupy the sketch-books of the members for the short hour allowed.

A short drive and a walk up the hill brought the party to Hoghton Towers, beyond question the *bonne bouche* of the week, where, by the kind permission of Sir James de Hoghton, a very happy three hours was spent, and seemed far too short. Sir James being away the duties of cicerone were performed by Mr. Hatch, of Lancaster, the builder who for nearly a quarter of a century has been engaged at Hoghton Towers in the various works that have been going on, at first under Messrs. Paley & Austin, and now under Mr. R. D. Oliver. Whether for its magnificent views, its plan, its grouping, or the excellence of the modern work now being carried out from Mr. Oliver's designs, it would be difficult to find a more delightful example of an English country mansion than Hoghton Towers. The great hall, between 50 ft. and 60 ft. long, is remarkable for having two bay windows at the dais end, but the most striking feature of the plan is the double arrangement of the quadrangles around which the house is grouped. The inconvenience of such a plan from a modern standpoint has been cleverly obviated by the recent construction of an underground corridor running underneath the upper quadrangle. The visitors were hospitably entertained with tea and could not help contrasting the reception they met at Hoghton with that at Holker. On the return to Preston a little time was found to spare for a brief inspection of the Harris Institute, and the party then returned by train to Lancaster.

Friday.

This was an intensely disappointing day. On the programme Furness Abbey was the venue, but unfortunately heavy rain the whole day quite spoilt the arrangements, as neither the scenery nor the ruins could be properly enjoyed. Furness Abbey forms No. XIV. of the *Builder* series of "Abbeys of Great Britain."

Friday evening, as usual, was devoted to business and merriment. For the business, the committee was elected for the ensuing year, Mr. W. Talbot Brown and Mr. A. W. Hennings being appointed joint secretaries, the *locale* of next year's visit was discussed, special stress being laid on the desirability of finding that part of England which has the minimum rainfall, and sketch-books were examined and compared. For merriment, songs, recitations, and humorous speeches served to enliven and to dissipate in some degree the sense of sadness at the parting which the morrow would bring.

Saturday.

Although the last day of the excursion is always looked upon as being rather broken into by preparations for "tapering off" on the part of the members, on this occasion, rather by way of exception, a considerable amount of interesting work was done by practically the whole of the members of the party.

The first visit was made to the ancient castle of Lancaster, now used as the county gaol. The natural advantages of the hill on which the castle is placed, commanding, as it does, the valley of the Lune, and what is even of still greater importance, the possession of an ample supply of fresh water at the very small depth of some 15 ft. below the surface, has made the site one that has been occupied by successive series of fortified posts from the times of the Romans, whose presence is proved by the discovery of coins, urns, a number of fragments of earthenware, calcined bones, votive altars, sepulchral lamps, and other antiquities which may possibly have belonged to the station known as Ad Alaunam or as Longovicum. In Saxon times it was also a place of importance, and in the seventh century it was the capital of the county, and some very early remains with Runic inscriptions have been found in the churchyard. The Saxon post Lunceastre and the town it guarded was destroyed during the Danish incursions, and the modern history of Lancaster Castle and town may be said to date from the time of Roger de Poictou, some of whose work undoubtedly still remains in the keep. John Earl of Morton and Lancaster, and John of Gaunt, fourth son of Edward III., made considerable additions, including the magnificent gateway, which was especially examined and ascended by the excursionists, who also inspected with considerable interest the curious construction of the so-called dungeons in the Well Tower, the vaulting of which is constructed of concrete that has been supported on a centreing of wattles, the marks of which are clearly evident on the under surface. Although popularly styled "dungeons," both the professional visitors and the governor and warders of the prison, who may be taken as professional experts in the requirements of dungeons, all agreed that there is small probability of these apartments being frequently, if ever, used for the purpose popularly assigned them; but, like many other lower stories of Norman keeps and castles, they probably formed the storehouse or cellars so necessary for provisioning a fortification against siege. Similarly there is without doubt no credence to be placed upon the popular ascription of some towers of Lancaster Castle to Adrian and Constantine.

Leaving the castle, the members made their way to the parish church, where they were met by the senior partner of the firm of Austin Paley & Austin, who took them round the building, pointing out and explaining the various parts of interest. The church appears to have been erected first by Roger de Poictou, who founded a Benedictine Priory here attached to the Abbey of St. Martin de Seez in Normandy. On the suppression of alien priories the establishment of Lancaster was by Henry V. annexed to the Abbey of Sion, in Middlesex. Of the building of Roger de Poictou's time little, if any, remains beyond the south doorway and the walling immediately adjacent, nearly the whole of the church having been rebuilt during the Perpendicular period, and

the tower again rebuilt in or about the year 1759, with some very peculiar results from the attempt of the eighteenth-century men to copy mediæval detail. Considerable attention was given to the very fine specimens of screen work and oak carving which form the canopies to the stalls now placed in the sanctuary of the church (see lithograph illustrations). Popularly these are supposed to have been brought from Cockersand Abbey, but Mr. Austin pointed out that Cockersand was too small an establishment to have been likely to have had in its church so large a number of stalls as here, and suggested that it was far more likely that they came from Furness. To add to the archæological puzzle, it is quite clear that some of the detail has been executed by foreign workmen; but this need not—knowing what we do of the travels of mediæval craftsmen—incline us to suppose that the work itself was executed anywhere else than in Lancashire. After taking note of the stained glass, of which there are some fine examples by Clayton & Bell and by Shrigley & Hunt amidst much that is atrocious, the party returned by way of the "hanging corner" to the Shire Hall adjoining the castle. After spending a few minutes here, the members then went on to visit the workshops of Mr. Hatch, with whose work they had become familiarised, and greatly pleased during the week, in the many examples which they had seen carried out by Mr. Hatch for Messrs. Paley & Austin and other architects. The wood-working machinery and the carvers' shop were the two special features that attracted the notice and interest of the party, and after examining these a return was made to the hotel, halting by the way at the studio of Messrs. Shrigley & Hunt. Group photographs were then taken by two of the amateur photographers who accompanied the party—Mr. Noblett and Mr. Osborne Smith, jun.—after which parting and leave-taking was the order of the day, some returning south to London and to work, others going off to Windermere and the Lakes.

SOME THOUGHTS ON OLD ENGLISH ARCHITECTURE.*

PERHAPS amongst the Cotswold Hills we can find as characteristic examples of architecture, both ecclesiastical and domestic, as in any district in England, and though they may not rank in importance with nobler and more imposing edifices, yet I venture to think they are as full of interest and charm as any of the remaining buildings in other parts of the country.

These hills, from their geological formation, lying in the great belt of oolitic limestones, gave a material eminently suited to withstand the ravages of time, and the isolated positions of the towns and villages and houses, cut off in many cases from the main arteries of traffic, have doubtless been the means of their preservation to-day.

In the limits of a short paper it is impossible even to touch upon the historical and social aspect of this Cotswold country, but it may be interesting to trace some of the methods and traditions of building throughout successive periods in England, and to note their bearing upon its architecture, and particularly as exemplified in many of the buildings in this district.

Towns of any pretension in which people lived for mutual protection and help were surrounded at first by a ditch or moat, and, later, by walls, with gates guarded and kept closed from sunset to sunrise; and villages in isolated positions, such as we see them to-day, hardly existed. Throughout the whole of the Anglo-Saxon times, and even much later, houses were on a very small scale, badly lighted and ill-drained, and adapted for protection from the weather only.

As we gather from the records relating to London and Winchester, towns were made up of low huts lining the narrow lanes, constructed of wood framing, or mud with roofs of straw or reed thatch; and, though the frequent recurrence of fires compelled the employment at last of more enduring materials, down to the great conflagration in the seventeenth century London was a city of wood and plaster. So serious and constant were the fires that the people were exhorted "to have water at men's doors" for readiness in case of emergency.

*A paper read before the Bristol and Gloucestershire Archæological Society at their annual meeting at Stow-on-the-Wold on July 27, by Mr. E. Guy Dawber.

It was not until the middle of the fourteenth century that towns began really to free themselves from the indescribable squalor and misery of the early Middle Ages, and municipal life and enterprise first asserted itself. Up to this time castles, cathedrals, monasteries, and religious establishments had been built, and the church was the dominant power in the land, owning more than a fifth of the whole of England, and exercising enormous influence; but as the trade of the country so rapidly developed and the rising towns felt their power, they threw off the yoke of the Church, and constituted themselves into separate municipalities, making their own laws, and even ratifying those made by the State.

In the twelfth and thirteenth centuries houses were seldom more than two or three stories high, with the lower one sometimes of stone or brick (though this was not compulsory until the reign of James I.), partly underground, and appropriated for the sale or storage of goods; and the ordinary house was a very simple affair, consisting of one room—the general living and sleeping room—and another, called the solar, either through it on the same level, or above it, and reached by a separate outside staircase. This upper room nearly always had a fireplace in it, and larger windows than in the room below, which were seldom more than narrow slits. In the larger houses this hall was generally open up to the roof, as at Oakham, in Rutland.

In the fourteenth century we begin to find the turret and inside staircases and the buildings spreading round a courtyard with stables and outbuildings, and the whole surrounded by a moat or ditch; indeed, in country houses of any pretension the manor and farmhouses were protected by enclosure walls, dykes, or moats. Birts-Morton, under the Malvern Hills, is a good example of a fourteenth century moated house, much of it built of timber and plaster, and, though modernised in later years, gives a good idea of its original condition; and many houses exist in Suffolk, Kent, and other parts of the country still surrounded by moats. We must recollect that down to the early part of the seventeenth century houses in England were more or less built for protection and safety, so that an Englishman could literally speak of his "castle," and many of the old so-called Border towers, along the northern marches of the country, were only ordinary dwelling houses, and were inhabited just as a farmer does his house to-day.

In the fifteenth century houses of any size were still quadrangular, with courtyard in the centre, and moats continued in use, though probably belonging to an earlier date. Icomb Place may be taken as a good instance of a house of this period. The hall, even in the smallest house, was the general assembly and living room, with the fireplace on a hearth in the centre, and the smoke escaped through an open cupola on the roof, as at Lincoln College at Oxford, and Penshurst in Kent, or as best it could through the windows.

The floors of the upper rooms were of wood, carried on corbels built into the walls, but the hall was usually of earth well rammed down by being continually trampled upon. In winter dry rushes were laid down, and in summer green fodder or sweet-scented herbs, but even with this precaution the floors must have been in a damp and dirty condition, and some idea of their state may be gathered from the fact that the doorway of the hall at Winchester was widened to admit of carts coming in. This was probably the origin of the raised dais that we find in so many of the old halls, to enable the head of the house to sit with some degree of comfort raised above the damp floor, which was considered good enough for his retainers.

Life must have been lived under very rough and crude conditions, and such as we could not tolerate to-day, for we know that window-glass was not made in England before the fifteenth century, though for years before it was one of the many commodities we obtained from Flanders in exchange for our staple production, wool. Some came from Normandy and Venice, but chiefly from the Low Countries and Lorraine, and down to the close of the seventeenth century most of the ordinary glass drinking-vessels sold in England were made in Venice and Flanders from patterns sent out by our glass dealers, though we read that some had been made in the reign of Queen Elizabeth at Crutched Friars, in London, by one Jacob Venaline, an Italian.

Glass windows, both plain and painted, had of course, long been used in ecclesiastical buildings, but it was not until the fourteenth century that it was applied to domestic ones, and then but seldom. There are, or were, some ten years ago, a few excellent examples of old fifteenth-century glass in the old Bishop's Palace at Temple Guiting in the windows of the hall, with the mitre and crozier and arms painted in the small quarries.

Before this time the window openings had iron bars, canvas, or lattices made of wicker, or rifts of oak in chequer work, or else wooden shutters attached to the head of the outside and propped open, badly fitted, and which let in the wind and wet, and in old accounts we often find a charge made for "making the windows shut better than usual," and in Henry III.'s reign a precept was issued for putting glass instead of wood in a window in the Queen's wardrobe at the Tower "so that that chamber might not be so windy," as the chronicler quaintly puts it.

Then, again, plastering and whitewashing were common in England in the twelfth and thirteenth centuries, and, in fact, continuously down to the present time, and churchwardens of fifty years ago can no longer lay claim to having discovered its excellent uses for ecclesiastical decoration, for, as far back as the reign of Henry III. we read of the Norman chapel in the Tower of London being whitewashed inside and out, and Westminster Hall was whitewashed for the coronation of Edward I.; in fact its use internally and externally was universal, both for the roof as well as walls, no doubt owing to its excellent fire preventive, as well as sanitary, properties.

When not whitewashed, and in the better houses, the plaster was coloured, and polychromatic decoration was carried to a great extent quite down to the sixteenth century, much the same as we see the houses painted in Holland and Southern Germany to-day, which is merely a survival of the old mediæval tradition, and in Lancashire and Shropshire the timbers of the old houses are still painted black and the plaster filling white, and there is no reason for supposing it improbable that this is but a continuation of the colour decoration of the Middle Ages.

Before the general introduction of wood panelling, tapestry and arras, or as the early writers describe it "hangings," were used for covering the walls of superior apartments, and had been even as far back as the tenth and eleventh centuries, when we read of stained and painted clothes being used—at first only over the doors, but in later years whole rooms were hung with it.

The earliest wood panelling in houses was of deal or fir imported from Norway, generally stained or painted green and powdered with stars of gold, or else subjects allegorical and legendary were painted in compartments; but there is no doubt that until quite late in the 16th century all stone and wood work were coloured, and it is only in recent times that we have banished colour and seem afraid to paint oak or stone.

In the long gallery at Chastleton Hall, the wainscoting on the walls bears traces of colour and gilding, and numerous examples remain in old houses all over England. Hardwicke and Haddon Halls and Bolsover Castle in Derbyshire, are full of most interesting instances.

At first the panels were small, and invariably carved with the well-known linen-fold pattern, and then larger and plainer, mixed with Italian detail and with richly-carved friezes and cornices. Compton Winyates, Chastleton, and numerous houses, both large and small, in this district, are full of it, both in its more elaborate and simpler forms. In halls, as at Chastleton, we generally find it about 8 ft. or 10 ft. high, with plaster above; once, no doubt, coloured or modelled in relief, and in smaller rooms carried right up to the ceiling.

Across one end of the hall was the screen, with openings leading to the buttery and the kitchens, and a very charming example can be seen at the Manor House at Little Wolford, where the original screen and gallery over still exist in the hall, with the fireplace at one side and an internal circular staircase leading up to the rooms above.

The sixteenth and seventeenth centuries were celebrated for rich timber-framed and plaster houses, such as those at Ludlow, Tewkesbury, and other places, but in the Cotswold hills we do not get much of it, except in the oak-bearing districts in the valleys where its presence is reflected in the buildings. At Little Wolford, Todenham, Broadway, Winchcombe, and Campden, are some instances, and

we find a few examples of external stamped and moulded plaster decoration also in Broadway, and one at Burford, dated 1688, and one in this town, in the corner house of the market-place, where a simple device of crosses set in squares makes a pleasing and effective arrangement. The old plaster-fronted house, called the "Star House," recently pulled down, was treated in this fashion, with patterns set out around the windows and in the gables, and as an interesting example of seventeenth-century work its loss is to be deplored; but the house was in such a ruinous and dilapidated condition that its demolition was only anticipated by a few years.

Of internal plaster work, ceilings and cornices, this district has its share, and the beautiful series at Chastleton Hall in the long gallery and various other rooms illustrate this delightful craft very exhaustively. At Birt's Norton, at Swell, at Broadway, at Banbury, and at Daneway House in the Stroud valley are some beautiful ceilings. All these were modelled by hand, the irregularity of the modelling giving a softness and undulation to the mouldings and ornament quite in contrast to the machine-like accuracy of much modern work.

Though plastering, or parquetting, is of very early use in this country, it was not until the great influx of Italian artists and workmen in the reign of Henry VIII. that it became a recognised branch of decoration. At first the ceilings were plain, set out with ribs of geometric rather than free-hand design; but, as these early ceilings in Elizabeth's reign always relied upon colour and gilding for their effect, they did not need to be elaborate. Edmund Spenser, the charming poet of the Elizabethan era, in speaking of them says—

"Gold was the parquet, and the ceiling bright
Did shine all scaley with great plates of gold."

As time went on they became extremely elaborate, and a mass of modelled and interlacing ornament and colour to a great extent ceased to be used. The ceilings even extended down on to the walls as a frieze, sometimes 6 ft. and 10 ft. deep, as at Crewe and Hardwicke Halls; indeed, in the sixteenth and seventeenth centuries the plasterer was the supreme decorator.

It was not, however, until the Renascence of Italy swept over France, producing the sumptuous "François Premier" style, and thence into this country, that the great houses of magnificence were built, such as Thornbury and Broughton, Montacute and Longleat. At this time the plans of houses, though no longer built round a courtyard, still retained the central hall; but the wings projected like the arms of a letter E or H, and the moat was abandoned and gave place to terraces and gardens of quaint and formal character. We may notice Wroxton Abbey, Castle Ashby, and Chastleton Hall as examples, and it is to this period—the seventeenth and eighteenth centuries—that the great bulk of the architecture now existing in the Cotswolds belongs.

In the Middle Ages and down to the eighteenth century all architecture was localised so to speak, and the Cosmopolitan methods of building we adopt to-day were quite unknown. In East Anglia, for example, a country of clay and gravel, we find brick and flint buildings universally, and stone was only used in special cases or in Ecclesiastical buildings, and then as an ornament and setting, and rarely as the main item of construction. In Kent and Sussex and the southern counties we have the local rag stone, and brick and tile hung buildings and tile roofs. In the West of England in the oak-bearing districts we find the black and white timber buildings, and in this the Cotswold district we have the stone treatment carried perhaps to its fullest development.

These hills, from time immemorial, were celebrated for feeding numerous flocks of sheep, for in former times the great barons preferred grazing, as then fewer hands were needed on the land, and their vassals could attend them in their numerous wars with each other or when fighting for the King. Before woollen goods were manufactured in England, and down to the middle of the fourteenth century, unwrought wool was sold direct to the Flemings, so that the breeding and feeding of sheep was the general practice, and it is doubtless owing to this that towns like Northbeach and Campden were once so prosperous and wealthy.

As far back as the twelfth century wool was our staple article of export, and it was sold to Italy and Flanders, the English and Cotswold wool in particular being esteemed before any other.

Northleach and Campden were the two principal woollen centres in this district, and held public markets for wool and cloth, and in the fourteenth and fifteenth centuries, perhaps, reached the zenith of their prosperity, during the time when England was the great centre and distributor of finished goods all over Europe.

In the church at Campden are a series of memorial tablets to many eminent clothiers or "woolmen," as they were called. William Groil, citizen of London, William Dobbins, John Lethenard, William Wotley, and William Greville, who all owned property in the parish, and who died in the fifteenth century—these, with the stately monuments of the Hicks family, the ancestors of the present Earl of Gainsborough, tell us better than anything else the wealth and importance in those days of this little town in the Cotswolds.

Part of William Greville's house of the fifteenth century is still standing in the main street, and an exquisite oriel window shows us the interest and pride that must have been taken in it, indeed the many large and costly houses, scattered about in the small towns and villages in these hills, are without doubt due to their large trade in wool.

The fifteenth century, that great era of church building in Gloucestershire, when so many noble buildings were erected by the pious munificence of the wealthy merchants of the staple, was of immense benefit to Campden, for we read that at this time the grammar school was founded, and that there were no less than four separate chantries in the parish. The name of Sir Baptist Hicks, first Viscount Campden, is indelibly connected with the town, as one of its greatest benefactors. He was Mayor and a merchant of London, dying in 1629, and had large estates in the parish, and in Tetworth, his native place, near Bristol.

He built and endowed the almshouses—a delightful group of buildings on a raised terrace by the church—and the Wool Market Hall, and a magnificent house for himself near the church, which was unfortunately burnt down during the Civil Wars, under the mistaken impression it would fall into the hands of the Parliamentarians. The entrance gateway and garden pavilions are all that remain of what must once have been a very beautiful and interesting building.

Perhaps Campden exemplifies more than any other place in this district the true spirit of this Cotswold architecture, though in every village are examples of it. Here you will find all styles, from the exquisitely delicate fifteenth-century work in the remains of the old Court House, to the stately and scholarly work of Sir Baptist Hicks, and the dignified examples of Queen Anne and the early Georges—small they may be, and, perhaps, to the passer-by, insignificant and hardly noticeable, but all betraying that sense of fitness of purpose and simplicity of expression so characteristic of English architecture in these periods.

In the matter of design, we can say with truth, "there were giants in those days," for go where we will amongst these Cotswold villages and contemplate any old building—one untouched by later renovations—and it is impossible not to be impressed by its beauty and subtle charm—the mullioned windows and latticed panes, the stone-slated roofs of all colours, the venerable walls covered with lichens, the absence of any meretricious or unnecessary ornament, and the wonderful feeling of homeliness that pervades everything, all combine to produce the very essence of simple and beautiful architecture.

With the rage for "improving" everything, much of this old work is being swept away; the dwellings of our ancestors, so closely interwoven with the life and history of the country, and possessing such an intensely human interest, are rapidly being destroyed, in many cases to make way for what can be regarded as only very doubtful improvements.

I do not suggest that unhealthy or insanitary houses should be retained, but I do urge that where it is possible to save them, that one should hesitate before breaking the few remaining links that bind the villages and country towns of to-day with the interest and associations of the past.

Convalescent Hospital, Cults, Aberdeen.—A convalescent hospital is being erected at Cults, the cost of which will be between 4,000*l.* and 5,000*l.* Messrs. W. & J. Smith & Kelly are the architects.

ARCHÆOLOGY AS A SCIENCE

We quote the following from the *Times'* report of Sir John Evans's opening address as President of the British Association meeting at Toronto:

"Whatever little I may have indirectly been able to do in assisting to promote the advancement of science, my principal efforts have now for many years been directed towards attempting to forge those links in the history of the world, and especially of humanity, that connect the past with the present, and towards tracing that course of evolution which plays as important a part in the physical and moral development of man as it does in that of the animal and vegetable creation. It appears to me, therefore, that my election to this important post may, in the main, be regarded as a recognition by this Association of the value of archæology as a science. Leaving all personal considerations out of question, I gladly hail this recognition, which is, indeed, in full accordance with the attitude already for many years adopted by the Association towards anthropology, one of the most important branches of true archæology. It is no doubt hard to define the exact limits which are to be assigned to archæology as a science, and archæology as a branch of history and *belles lettres*. A distinction is frequently drawn between science on the one hand and knowledge or learning on the other; but translate the terms into Latin, and the distinction at once disappears. In illustration of this I need only cite Bacon's great work on the "Advancement of Learning," which was with his own aid translated into Latin under the title "*De Augmentis Scientiarum*." It must, however, be acknowledged that a distinction does exist between archæology proper and what, for want of a better word, may be termed antiquarianism. It may be interesting to know the internal arrangements of a Dominican convent in the Middle Ages; to distinguish between the different mouldings characteristic of the principal styles of Gothic architecture; to determine whether an English coin bearing the name of Henry was struck under Henry II., Richard, John, or Henry III., or to decide whether some given edifice was erected in Roman, Saxon, or Norman times. But the power to do this, though involving no small degree of detailed knowledge and some acquaintance with scientific methods, can hardly entitle its possessors to be enrolled among the votaries of science. A familiarity with all the details of Greek and Roman mythology and culture must be regarded as a literary rather than a scientific qualification; and yet when among the records of classical times we come upon traces of manners and customs which have survived for generations, and which seem to throw some rays of light upon the dim past when history and writing were unknown, we are, I think, approaching the boundaries of scientific archæology. Every reader of Virgil knows that the Greeks were not merely orators, but that with a pair of compasses they could describe the movements of the heavens and fix the rising of the stars; but when by modern astronomy we can determine the helical rising of some well-known star, with which the worship in some given ancient temple is known to have been connected, and can fix its position on the horizon at some particular spot, say, 3,000 years ago, and then find that the axis of the temple is directed exactly towards that spot, we have some trustworthy scientific evidence that the temple in question must have been erected at a date approximately 1,100 years B.C. If on or close to the same site we find that more than one temple was erected, each having a different orientation, these variations, following, as they may fairly be presumed to do, the changing position of the rising of the dominant star, will also afford a guide as to the chronological order of the different foundations. The researches of Mr. Penrose seem to show that in certain Greek temples, of which the date of foundation is known from history, the actual orientation corresponds with that theoretically deduced from astronomical data. Sir J. Norman Lockyer has shown that what holds good for Greek temples applies to many of far earlier date in Egypt, though up to the present time hardly a sufficient number of accurate observations have been made to justify us in foreseeing all the instructive results that may be expected to arise from astronomy coming to the aid of archæology.

The intimate connexion of archæology with other sciences is in no case so evident as with respect to geology, for, when considering subjects such as those I shall presently discuss, it is almost impossible to say where the one science ends and the other begins. By the application of geological methods many archæological questions relating even to subjects on the borders of the historical period have been satisfactorily solved. A careful examination of the limits of the area over which its smaller coins are found has led to the position of many an ancient Greek city being accurately ascertained; while in England it has only been by treating the coins of the Ancient Britons, belonging to a period before the Roman occupation, as if they were actual fossils, that the territories under the dominion of the various kings and princes who struck them have been approximately determined. In arranging the chronological sequence of these coins, the evolution of their types—a process almost as remarkable, and certainly as well-defined, as any to be found in nature—has served as an efficient guide. I may venture to add that the results obtained from the study of the morphology of the series of coins were published ten years before the appearance of Darwin's great work on the "Origin of Species." When we come to the consideration of the relics of the early Iron and Bronze Ages, the aid of chemistry has of necessity to be invoked. By its means we are able to determine whether the iron of a tool or weapon is of meteoritic or volcanic origin, or has been reduced from iron ore, in which case considerable knowledge of metallurgy would be involved on the part of those who made it. With bronze antiquities the nature and extent of the alloys combined with the copper may throw light, not only on their chronological position, but on the sources whence the copper, tin, and other metals of which they consist were originally derived. I am not aware of there being sufficient differences in the analyses of the native copper from different localities in the region in which we are assembled for Canadian archæologists to fix the sources from which the metal was obtained which was used in the manufacture of the ancient tools and weapons of copper that are occasionally discovered in this part of the globe. Like chemistry, mineralogy, and petrology may be called to the assistance of archæology in determining the nature and source of the rocks of which ancient stone implements are made; and, thanks to researches of the followers of those sciences, the old view that all such implements formed of jade and found in Europe must of necessity have been fashioned from material imported from Asia can no longer be maintained. In one respect the archæologist differs in opinion from the mineralogist—namely, as to the propriety of chipping off fragments from perfect and highly finished specimens for the purpose of submitting them to microscopic examination. I have hitherto been speaking of the aid that other sciences can afford to archæology when dealing with the questions that come almost, if not quite, within the fringe of history, and belong to times when the surface of our earth presented much the same configuration as regards the distribution of land and water and hill and valley as it does at present, and when in all probability the climate was much the same as it now is. When, however, we come to discuss that remote age in which we find the earliest traces that are at present known of man's appearance upon earth, the aid of geology and palæontology becomes absolutely imperative. The changes in the surface configuration and in the extent of the land, especially in a country like Britain, as well as the modifications of the fauna and flora since those days, have been such that the archæologist pure and simple is incompetent to deal with them, and he must either himself undertake the study of these other sciences or call experts in them to his assistance. The evidence that man had already appeared upon the earth is afforded by stone implements wrought by his hands, and it falls strictly within the province of the archæologist to judge whether given specimens were so wrought or not; it rests with the geologist to determine their stratigraphical or chronological position, while the palæontologist can pronounce upon the age and character of the associated fauna and flora. If left to himself, the archæologist seems too prone to build up theories founded upon form alone, irrespective of geological conditions. The geologist, unaccustomed to archæological details, may readily fail to see the difference between the results of the operations of nature and those of art, and may be liable to trace the effects of man's handiwork in the chipping, bruising, and wearing, which in all ages result from natural forces; but the united labours of the two, checked by those of the palæontologist, cannot do otherwise than lead towards sound conclusions."

While the above passage forms in the main an interesting summary of the scientific position of archæology, we cannot pass over without a protest the reference to Sir Norman Lockyer's so-called discoveries as to the importance of the astronomical element in the Egyptian temples. His name as an eminent astronomer attracted attention at first to his theories, but his book on the subject, "The Dawn of Astronomy," in which he practically represented the Egyptian temples as telescopes for looking at certain stars, was soon recognised by every impartial reader who knew anything of architecture to be a piece of fantastic exaggeration, which in fact has drawn some ridicule upon its author. The book is already dead, and we are surprised to see any serious reference to it again.

Books.

Water and its Purification: A Handbook for the Use of Local Authorities, Sanitary Officers, and others interested in Water-Supply. By Samuel Rideal, D.Sc. (Lond.). London: Crosby Lockwood & Son. 1897.

THIS is a very useful book, though it will possibly prove, in parts at any rate, too technical for the majority of the readers to whom it is addressed. It commences by describing the characters of natural waters. Here we notice (p. 4) that the author ascribes a yellowish tint in water as due to the possible presence of urine. That is perfectly true, but that tint is much more frequently brought about by iron derived from the rocks through which, or over which, the water has traversed. Again, it is stated that: "The grosser suspended matter in a water can be removed by filtration or subsidence, whilst that dissolved is not affected by such treatment." The author surely would not contend that *no* dissolved matter is removed by filtration! To say nothing of what is removed (probably by organic agency) by filtration in sand and gravel filter beds, we may recall the effect of "spongy iron," "revolving iron" filters, &c., in removing much that was chemically dissolved in the water passing through them. The chapter devoted to "Animal and Vegetable Impurities" is excellent and well illustrated. We cannot say as much, however, for the section dealing with "Springs and Wells," and the author would have done well to have had this portion revised by a competent geologist who understands the geological aspects of water supply. It disfigures the book as it stands. Without attempting any detailed criticism we may remark that the *general* tendency of weathering is not to leave "synclinal curves as basins." The "line of emergence of a stratum at the surface" is not a good definition of "outcrop," for wherever the rock comes to the surface it is said to crop out (outcrop); neither is the direction of that line necessarily "the strike." The following sentence is quite incomprehensible: "The strike on a flat surface would be at right angles to the dip, but this relation is much disturbed by inequalities on the surface, so that the outcrop becomes a sinuous or wavy line." We advise the author to read a shilling primer of Geology before writing any more on that science.

In a practical work of this kind we are astonished to find the author following (p. 71) the report of Mr. Wethered as to the relative porosity of different geological formations. In such a fanciful document as the average British Association Report we do not look for much good work nowadays. The figures quoted no doubt accurately represent the result obtained by steeping small samples of different stones in water for some hours; but in the field the rate of porosity, even in the same class of stone, varies within very wide limits. The development of a thin seam of clay, for instance, in a sandstone will most materially affect the latter's porosity. Sandstone will also materially vary according to the nature of the cement binding the grains of sand together, and so on. Such tables have no practical value for working purposes, and are absolutely misleading in many cases.

The "divining rod" comes in for a good share of recognition, and the author is a believer in it. Without traversing the question we may remark that, supposing the "water-finder" can discover water by means of the divining rod, that water is mostly surface water, or occurring only at shallow depths, its quality is often such as to disqualify it for potable purposes. The diagram of a section through the London basin is a remarkable production—but we refrain from further comment on it.

The author is more at home when dealing with "Rivers" and their pollution, "Storage," "Filtration," and the like. "Household Filtration" and the "Softening of Water" are dealt with at some length, but we do not notice anything novel—the subjects are well presented. Perhaps the best part of the book is the chapter on "Analysis and Interpretation of Results," and there is a good deal of useful information in the tables at the end. If we have ventured to point out a few blemishes it is not because we have not a high appreciation of the book as a whole.

Appleby's Illustrated Handbook of Machinery. Section II.—Hoisting Machinery. By C. J. Appleby, M.I.C.E. London: E. & F. N. Spon, Ltd. 1897.

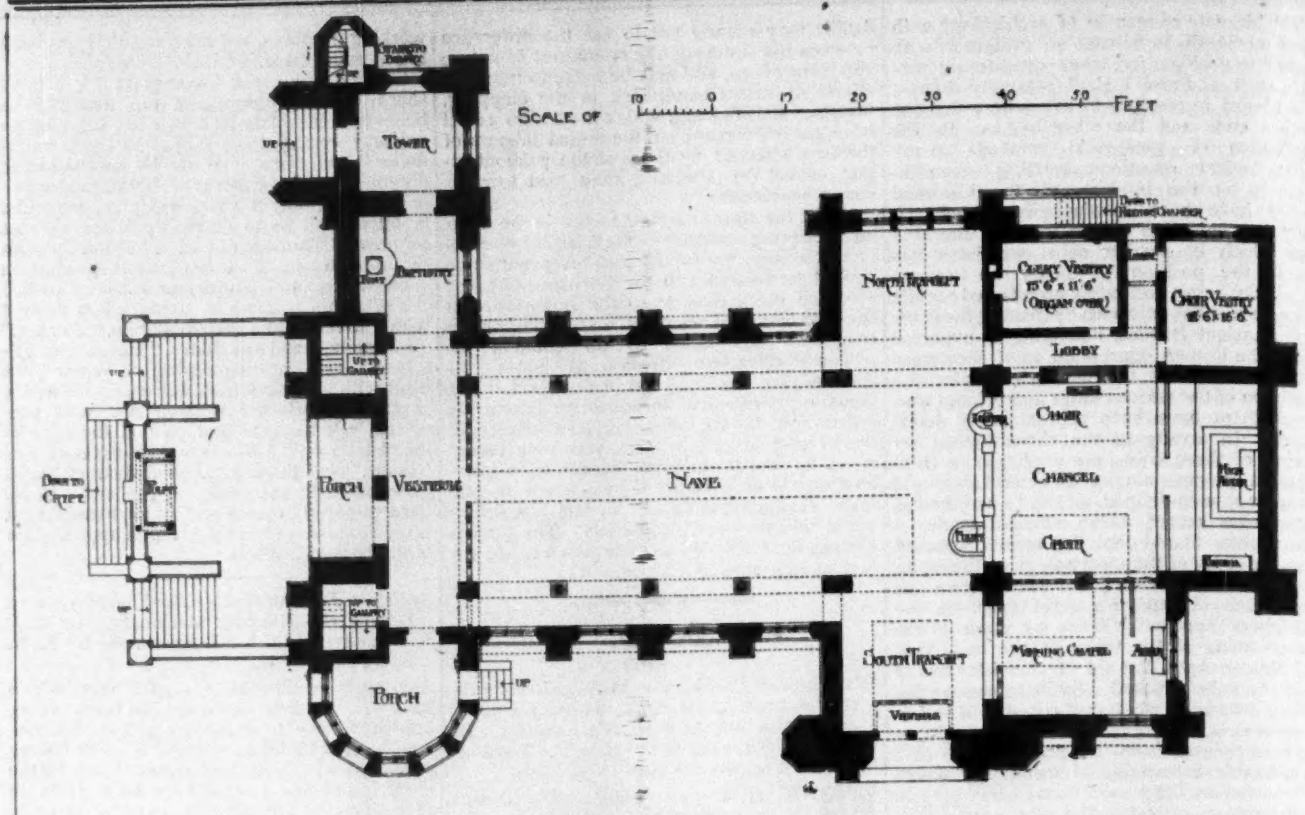
Appleby's handbooks of machinery, which have been in existence for the last thirty years, are well known to engineers and contractors, and a new edition—which is now being published—has been rendered necessary by the great improvements that have been made in recent times in the manufacture of all kinds of machines. The present edition, which is being entirely rewritten, will be composed of seven volumes, dealing with practically every kind of machine generally used by those who have to carry out any kind of engineering work, and the information given will be found of special service to contractors, not only in this country but also abroad.

As the author's firm are the makers of a large part of the machinery referred to, the books have, naturally, somewhat the appearance of trade catalogues, but on examination they will be found to be much more than mere lists of plant, and Mr. Appleby's connexion with the manufacture of the machinery he describes allows him to speak on such matters as their cost with authority.

In the present volume all kinds of hoisting machinery, from a simple screw-jack to a 100-ton steam floating crane, are described and illustrated, their cost, capabilities, and such like information is always given, often at considerable length, and the most modern machines, as well as the employment of electricity for driving purposes, are referred to. Great care has evidently been taken that the present edition should be brought quite up to date, and be able to maintain in the future that reputation for usefulness and accuracy that the publication has hitherto always commanded.

Asbestos and Asbestic: Their Properties, Occurrence, and Use. By Robert H. Jones, F.S.A. London: Crosby Lockwood & Son. 1897.

Although we are not informed of the fact on the title page, this is evidently a second edition of the author's work on "Asbestos" published some years since. Mr. R. H. Jones is the acknowledged authority on the economic value and uses of asbestos, and the expanded work before us is the most complete text-book on the subject. It is inclined to be chatty, and a number of details, of purely local interest might well have been omitted. A certain "Manufacturing Company of New York," and the various contracts they have secured during the past year or two, are alluded to in such a prominent manner that when we first opened the book we were afraid that it was a kind of "glorified advertisement"; but a glance at the earlier chapters dispelled the idea. The book is not only a splendid compilation (drawn from all conceivable sources) of what is known of the history and occurrences of asbestos, but contains much original matter, the result of personal investigation on the author's part. Dealing with the present sources of supply, we are told that the British Isles seem to be entirely shut out from the list of asbestos producers. The two countries which at present furnish the bulk of the world's supply are Italy and Canada. Speaking of the relationship subsisting between



Design for Memorial Church. Plan.

asbestos and serpentine, the author discusses the ornamental serpentines of Canada, and he is of opinion that they might be successfully introduced into the English market. We are afraid that Continental and Irish competition would prove too much for the American material. That section devoted to the use of asbestos for building purposes contains nothing new; it recommends the more extended use of the substance for fire-resisting purposes. In reference to asbestic, which has already been described in the *Builder*, it is a wall plaster, composed entirely of asbestos and possessing many of the qualities of the latter. Asbestic plaster is prepared in two qualities, namely "rough asbestic" and the "finish." The former may be applied to the walls of a new building, upon brick, metal, laths, plain boards, or expanded metal, and when dry, forms a coating of the nature of asbestos feltboard. This coating is covered with a layer of the "finish," which is pure, fine asbestos and produces a smooth surface. The work also contains much useful information on slag wool, soapstone, boiler and pipe coverings, &c.

John Ruskin: his Life and Teaching. By MARSHALL MATHER. Third Edition. London: Frederick Warne and Co. 1897.

SURELY it is time that we saw the last of books on the Ruskin cult. They are out of date now, as their writers will probably find. This one contains the usual series of chapters on different phases of Ruskin's works and the usual explanation and comments for the uninitiated reader, some of which are open to a good deal of criticism. There is a piece of enthusiastic writing about the "Téméraire" picture, for instance, in which certain "laws" of Ruskin's are illustrated by the picture; "try to represent the appearance of things, never what you know the thing to be" (a *dictum* which is open to question in some cases, at all events); accordingly the reader is instructed to note how Turner has omitted a great deal of the rigging of the ship, also the portholes of the distant ships, because from his point of view they would not be seen. That is, he did not choose to see them; a sailor would have seen them. We may no doubt be quite right often to omit details in pictures which could be seen in nature; but let us have the right reason for it. Then the author proceeds to show how the "Téméraire" illustrates the Ruskin edict (though why it should be claimed as his property we do not know) "draw accurately what you see." Did the author ever seem a steamtug with a lateral angle in the middle of her length? For that is the way Turner's steamtug is drawn; the perspective is all wrong. It is curious to see how this kind of writing goes on still; but we should hardly think there is much of a public for it now. Is it not time that some one published a book on the absurdities of Ruskin? He would find a considerable field for criticism, and might even find his work more popular than he expected.

TRADE CATALOGUES.

MESSRS. JOHN TULLIS & SON'S (Glasgow) "Guide to Belt Driving" is a finely-illustrated catalogue, and something more, as it contains a paper by Mr. Tullis, originally read at the Convention of British and Irish Millers in Glasgow some years ago, giving the results of his experience on the subject of belt driving generally, and also a series of "Hints on belt driving," which are of the greatest practical value. The illustrations, including carefully executed sections of various makes of belt to a large scale, give a good idea of the amount of skill and thought which has been expended on what may seem to outsiders the very simple matter of a belt rove round two wheels to make one drive the other, but which is in reality a subject of the greatest nicety and delicacy in regard to make and adjustment in order to transmit the power without loss and with the least possible wear and tear. Power in a mill is money, and a belt which is not doing its work in the most efficient way is losing money at every revolution. Among the special points illustrated in the catalogue may be mentioned the flexible centre link belt, which will accommodate itself to pulleys of different form; the link belt arched in section on one side to enable it to grip the whole surface of a rounded pulley; the various built-up sections of leather driving ropes; the modes of stretching, jointing, and putting on belts, &c.——Messrs. Berry & Chapman (Hornsey) send us their catalogue of apparatus for warming houses with either hot air or hot water, with sections of their hot water heaters, and a sectional view of a dwelling-house warmed on their combined hot air and hot water principle. They state that they are prepared to warm a dwelling-house "such as is rented in London at from 50*l*. to 70*l*. per annum" at an initial cost of 20*l*. to 25*l*., proportionately increasing with the size. A London house of that rental, however, must obviously be a very small one.

REREDOS, ST. PAUL'S CHURCH, LONGRIDGE.—A reredos is being erected in St. Paul's Church, Longridge. The architect is Mr. Christian, of London. The wood carving is by Messrs. Cornish & Gaymer, of North Walsham. The centre piece is a sculptured panel representing the Lord's Supper.

Illustrations.

PROPOSED MEMORIAL CHURCH.

THIS design was prepared for a church with seating accommodation for about 400, and would be constructed of stone, with Broseley tile roofs, at an estimated cost of 16,000*l*.

The drawing was an exhibit in this year's Royal Academy Exhibition, Messrs. Clark & Hutchinson being the authors.

As we observed at the time, in criticising the Academy architecture, the design shows a good deal of decidedly original feeling and treatment.

KINETON CHURCH.

THE stalls, organ case, and screen at Kineton Parish Church, Warwickshire, of which we give an illustration, are designed by Mr. John Belcher, the organ being erected so as to leave free space all round it, a point often neglected.

The drawing was exhibited at the Royal Academy.

The work at the church also included the erection of new vestries, for which Mr. Tallis of Warwick, was the contractor. The organ is built by Messrs. Brindley & Foster.

CARVED OAK STALL CANOPIES, LANCASTER CHURCH.

THE two illustrations from photographs give some idea of the richness of the foliage carving of the stall canopies in Lancaster Church, mention of which is made in our account of the excursion of the Architectural Association on another page.

It is not the first time this splendid piece of mediæval work has been brought under the notice of our readers, but we are not aware that any illustration of it has been given in our pages, for many years back at all events.

The sumptuous character of the carving, and multiplicity of detail in it, leave no doubt that it has been work carried out for some special purpose of importance, and with an effort to produce something of exceptional excellence and over which no pains were to be spared. It is known that the work was not executed for its present position—the theory used to be that it was brought from Cockersand Abbey, a theory, however, for which we never heard any reason given. Mr. Austin, we observe, on the occasion of the Architectural Association visit, expressed the opinion which we have always held, that the work had most probably be-

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KINETON: CHURCH: WAR
WICK SHIRE: NEW STALLS
ORGAN CASE & SCREEN

PHOTO SPRAGUE & Co. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

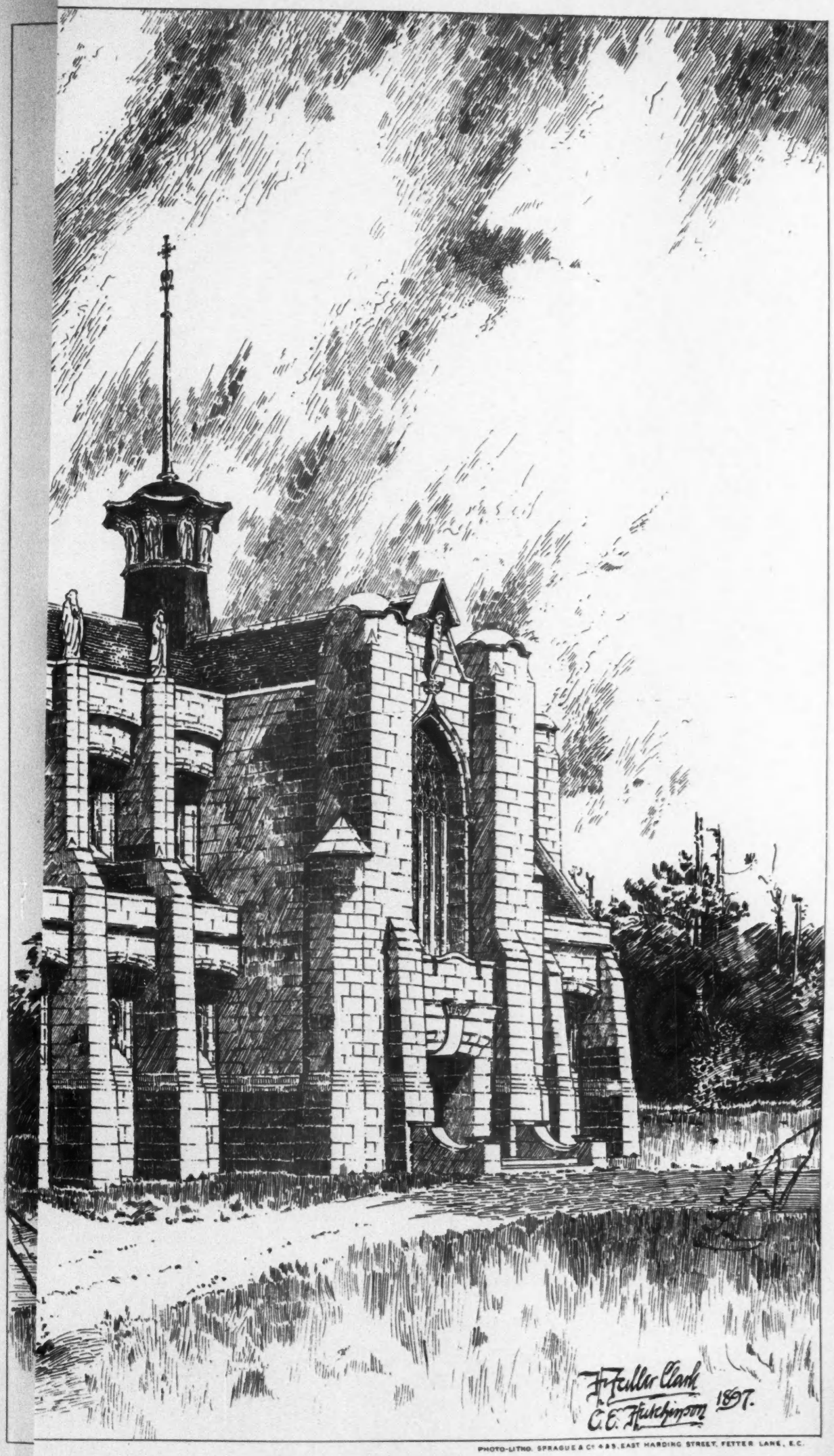
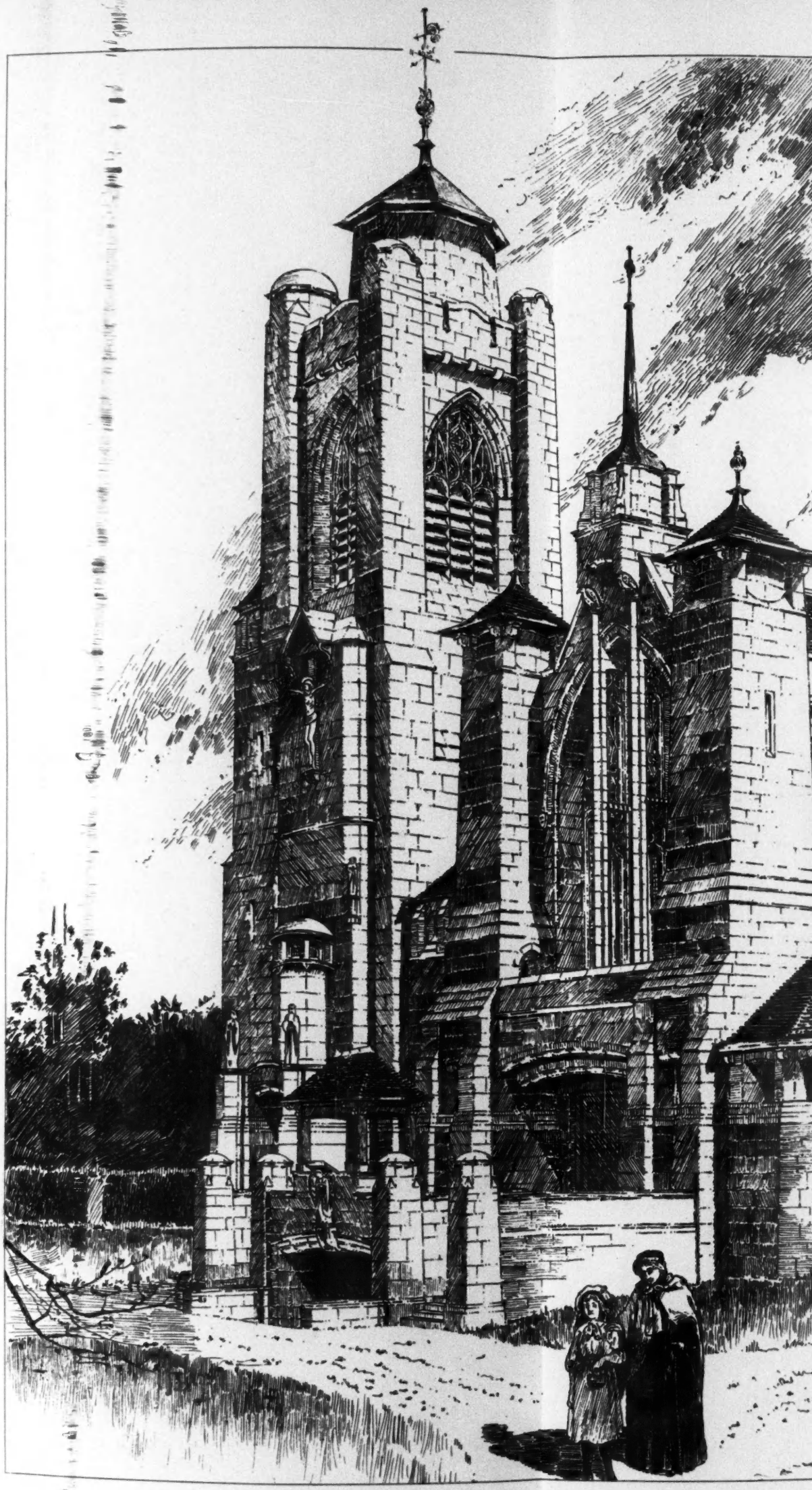


PHOTO-LITHO. SPRAGUE & Cº 493, EAST HARDING STREET, FETTER LANE, E.C.

CHINSON, ARCHITECTS.



PROPOSED MEMORIAL

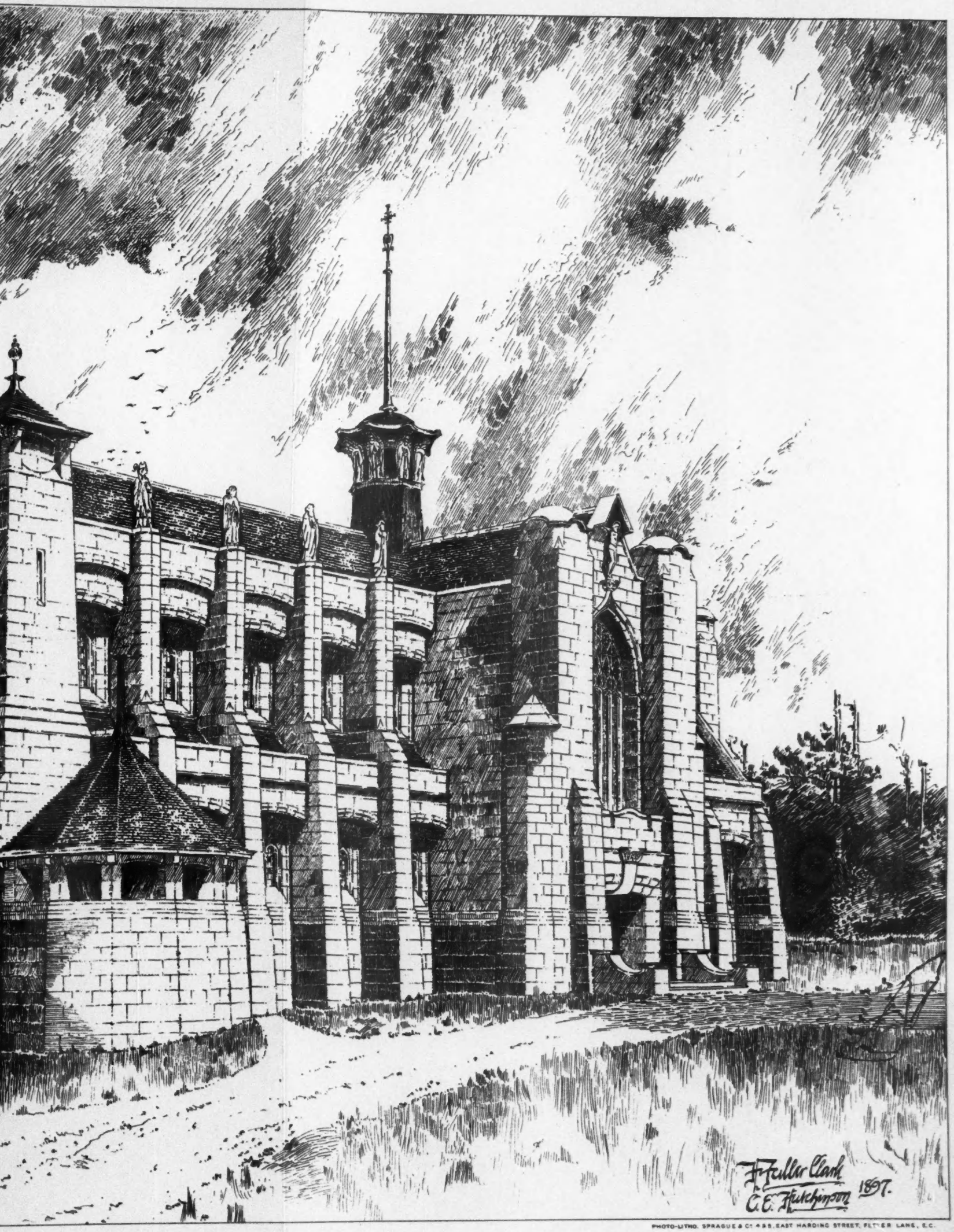


PHOTO-LITHO. SPRAGUE & Co 4 & 5, EAST HARDING STREET, FLETTER LANE, E.C.

MEMORIAL CHURCH.—Messrs. Clark & Hutchinson, Architects.

PHOTO-PHOTO. SPRAGUE & CO. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

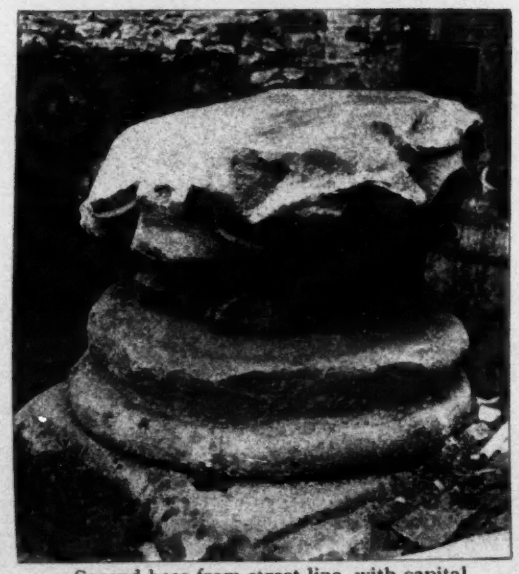
CARVED OAK STALL-CANOPIES, LANCASTER CHURCH.

CARVED OAK STALL-CANOPIES, LANCASTER CHURCH

INK-PHOTO SPRAQUE & CO 48 E. EAST HARDING STREET PETTEW LANE, E.C.

Bases, capital, &c., first exhumed.

General View, showing the three bases *in situ*; fallen columns, tiles, &c.



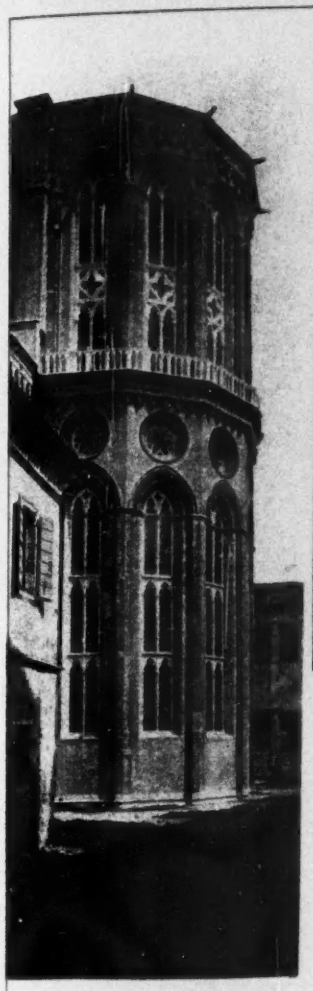
Second base from street line, with capital now superimposed.

Fragment of Altar.

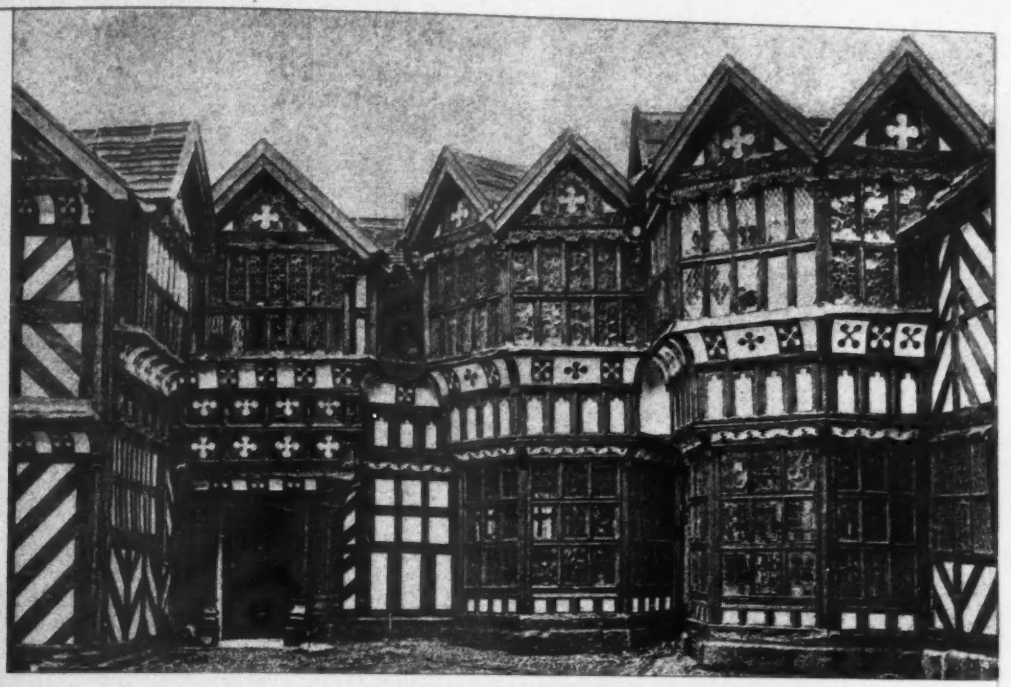
Fragment of Sculpture.

INK-PHOTO. SPRAGUE & Co. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

ROMAN REMAINS RECENTLY DISCOVERED AT CHESTER.—From Photographs by Mr. Matthews Jones.

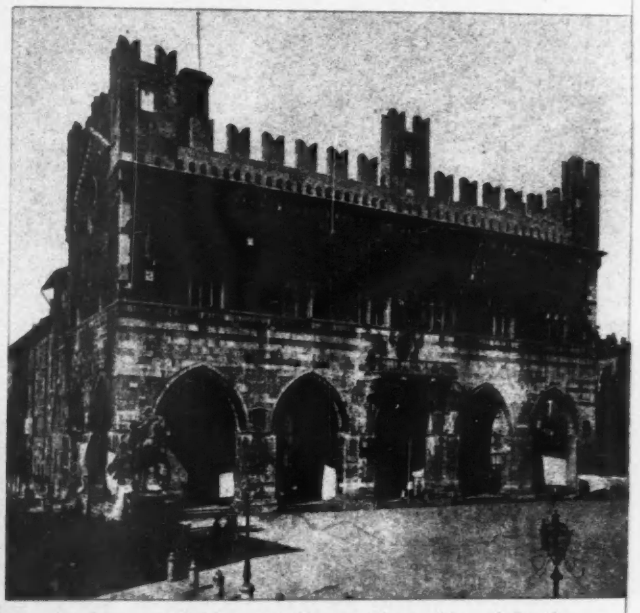


Brick Influence: Venice.

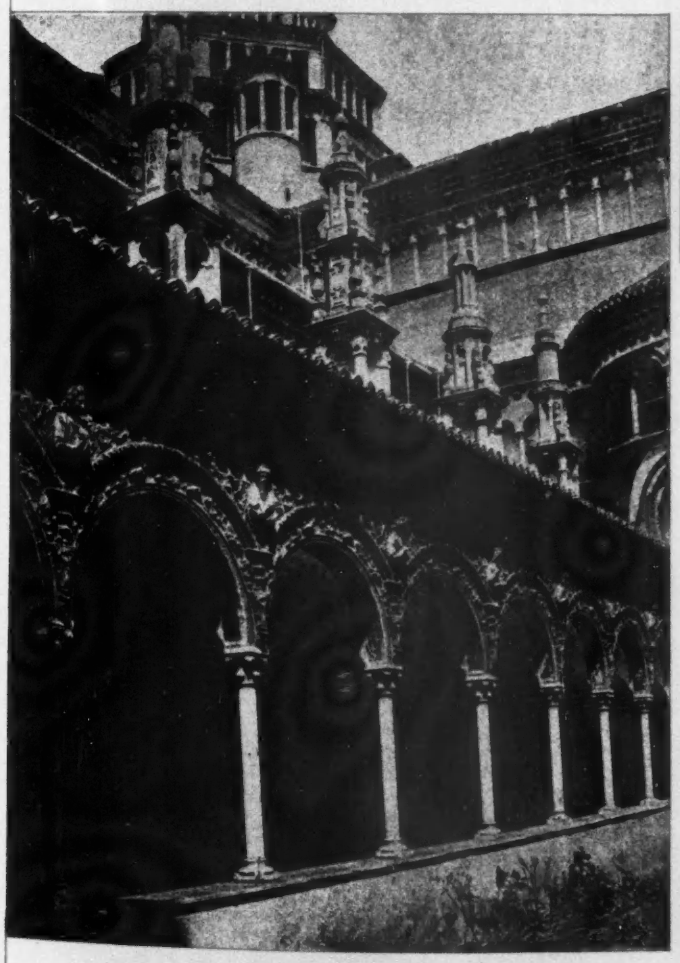


Wood and plaster type: England.

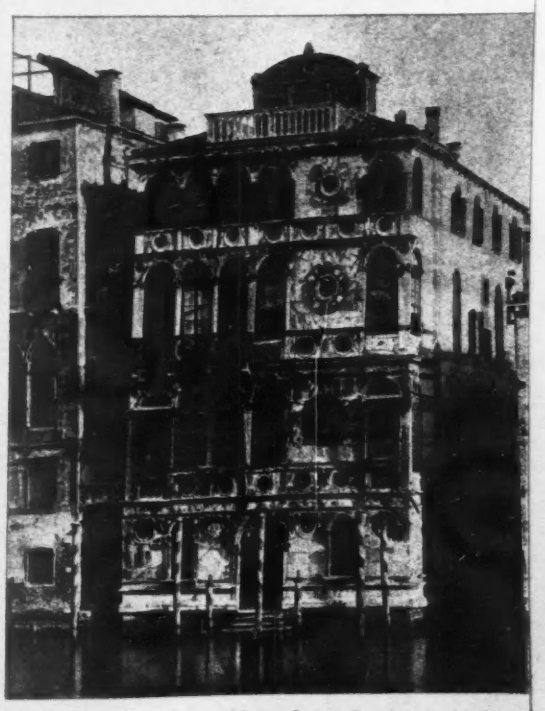
ILLUSTRATIONS TO
MR. BANISTER FLETCHER'S
ESSAY:
"INFLUENCE OF MATERIALS
ON
ARCHITECTURE."
(From photographs.)



Influence of brick on smallness and repetition of detail: Piacenza.



Influence of plastic terra-cotta on richness and smallness of detail: Pavia.



A Venetian Palace: marble surface colouring and inlay.

INK-PHOTO. SPRAGUE & CO. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

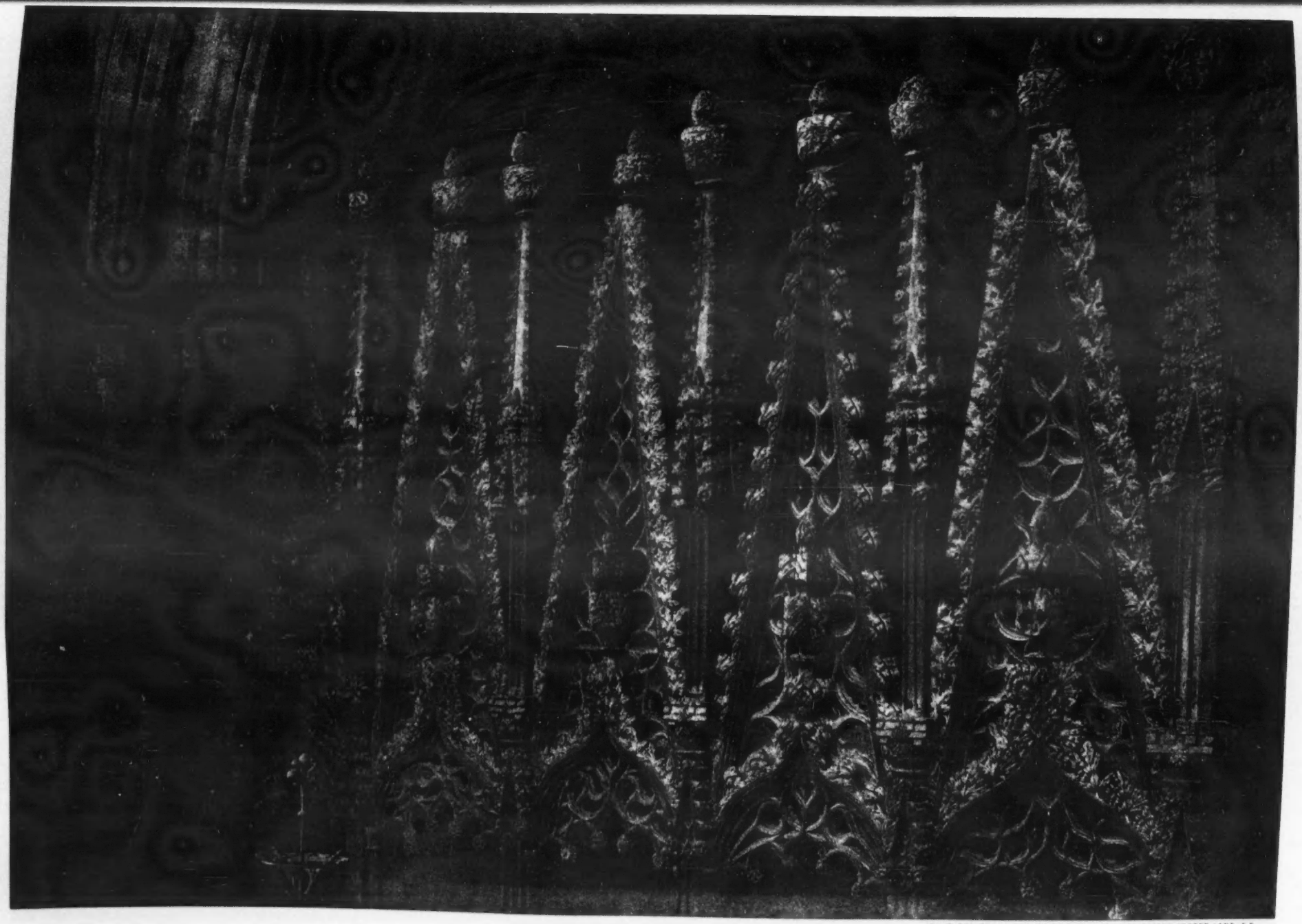
ROMAN REMAINS RECENTLY DISCOVERED AT CHESTER.—FROM PHOTOGRAPHS BY MR. MATTHEWS JONES.

Fragment of Sculpture.

Fragment of Altar.

Second base from street line, with capital now superimposed.

INK-PHOTO. SPRAGUE & CO. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.



INA-PHOTO. SPRAGUE & Co. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

CARVED OAK STALL-CANOPIES, LANCASTER CHURCH.

longed to Furness Abbey. It is in the great ecclesiastical establishment of the neighbourhood that we might expect with most probability to find a piece of work of such exceptional richness and character.

We hope that the excursionists when examining this work, looked at the mouldings of the canopy, which are rather remarkable as examples of mouldings which externally appear to be of the usual character of Decorated work, but in which the hollows have a special section, angular instead of round, as more suitable for working in wood. The section is shown in the chapter on "Mouldings" in Mr. H. H. Statham's "Architecture for General Readers," page 140, as an example of a section of a moulding modified to suit the material.

ROMAN REMAINS IN CHESTER.

WE give a sheet of illustrations of the Roman remains recently found in Chester, from photographs made by Mr. W. Matthews Jones, the son we believe of the City Surveyor of Chester. The remains were discovered on the site of some premises in Northgate-street. The line formed by the three bases of columns is approximately at a right angle with Northgate-street, their intercolumniation distance between about 11 ft.

The illustrations show first, the first exhumation, with the portion of a fallen column then found; secondly, the view of the site after further excavation, with the three bases standing in line; thirdly, the base and a considerably defaced capital mounted on it; next a stone, said to be part of an altar, with the letters—

GENIO . . . .
V.V.E . . . .
T.VET . . . .

and a much worn head of a statue.

It is to be hoped that circumstances will render it possible to follow out the investigation of the ground in the immediate neighbourhood further, and that additional remains in connexion with these may be found.

EXAMPLES OF "INFLUENCE OF MATERIALS ON ARCHITECTURE."

THESE views are given as illustrations to the portion of Mr. Banister Fletcher's essay printed in the present number. The Frari Church, a portion of the Certosa at Pavia, and the Town Hall of Piacenza, as examples of work in brick and terra-cotta; the Venetian Palace as showing the flat treatment induced by a preference for coloured surface material, and Moreton Hall, England, as an example of work executed with timber and plaster and producing its effect in a manner arising naturally out of the treatment and character of the materials.

COMPETITIONS.

TOWN HALL, CARDIFF.—A special meeting of the Town Hall Committee of Cardiff Corporation was held in the Council Chamber on the 14th inst. for the purpose of meeting Mr. A. Waterhouse, R.A., who has been appointed by the Corporation as assessor in the competition for designs and plans for the new Town Hall and Law Courts. The Committee, in conjunction with Mr. Waterhouse, considered some important points in connexion with the conditions of the competition, several technical details being altered as suggested by the assessor. Mr. Waterhouse, who has twice carefully inspected the site, said he was exceedingly pleased with it, and that no other town in the United Kingdom possessed one like it for such a purpose.

COLCHESTER TOWN HALL.—The Municipal Offices (Special) Committee of the Colchester Town Council have embodied in the minutes of their meetings the report of their assessor, Mr. R. Norman Shaw, R.A., on the eight sets of competitive plans received for the construction of a new Town Hall. In the case of the design which the assessor had placed first, the scheme was, he stated, one of exceptional merit, and exceptionally well fitted for its purpose, and most original and striking as an architectural composition. As far as general design and character went, he decidedly preferred the one to which he awarded the second premium, but that and the one he placed third had serious defects in planning. The designs were marked in cypher, and the one placed first proved to be from Mr. J. Belcher, 20, Hanover-square, W.; the second was from Messrs. Baker, May, & Rickards, London; and the third from Mr. E. W. Mountford, 17, Buckingham-street, W.C. The estimates submitted by the architects in connexion with their respective designs varied from about 31,000*l.* to 35,000*l.*, these amounts being inclusive of the proposed tower. It was recommended that before any decision was come to, all the plans be exhibited in the Council Chamber for one month.—At the last meeting of the Town Council, Councillor Benham, in moving the adoption of the report, said the opinion of Mr. Shaw and other architects was that from an architectural and economical point of view it would be right to sweep the existing building away and not try to patch it up. Alderman Goody seconded this. Councillor Greenwood moved as an amendment that the Council should be allowed to inspect the plans before the general public. The report was adopted, the amendment being also accepted.—Mr. Belcher's design represents a building of three stories, in brickwork and stone. It is Renaissance in style, and the building is designed to extend from the Corn Exchange round the corner of Stockwell-street to the Public Library. At one corner is a high tower, partly of brick, surmounted with sculptured masonry, with a regal crown as its topmost ornament. The tower is designed to contain bells and a two-faced clock. The basement makes provision for boiler-houses, strong rooms, store-room, room for electric lighting apparatus, police recreation-room, &c. On the ground floor is a large entrance hall, with witnesses' room, a solicitors' room, barristers' room, and the police offices. A mezzanine floor occupies the front portion of the building above the ground floor, and contains offices for the borough officials. Above the mezzanine floor is the Council Chamber, 38 ft. by 33 ft., with a public gallery. On the same floor are two committee-rooms, the Mayor's reception-room, the Town Clerk's office, two robing-rooms, and a waiting-room. Above this floor is the Assembly-room or Moot Hall, 84 ft. by 33 ft.

TECHNICAL SCHOOL, BOOTLE.—In response to the advertisements of the Bootle Corporation inviting competitive plans of a Technical School to be erected at the corner of Balliol-road and Pembroke-road, at a cost not exceeding 15,000*l.*, and offering premiums of 50, 30, and 20 guineas for the three best designs, there have been received twenty-two sets of plans. Mr. W. E. Willink, President of the Liverpool Architectural Society, has been appointed by the Free Library and Museum Committee to act as referee to advise them in the consideration of the plans. There were forty applications to the Borough Engineer for a plan of the site and instructions, and the Committee has resolved that the guinea deposits of those architects who failed to compete be not returned.

PIER IMPROVEMENTS, BLACKPOOL.—At a meeting of the directors of the Blackpool Jetty Company, recently, the design submitted by Mr. R. Knill Freeman, F.R.I.B.A., in a limited competition for the extension of the central pier and the erection upon it of a pavilion and other buildings, was adopted. The engineering works in connexion with the sub-structure will be carried out from the designs of Mr. Thos. Dryden, engineer, Preston.

ARCHÆOLOGICAL SOCIETIES.

CAMBRIAN ARCHÆOLOGICAL ASSOCIATION.—The annual meeting of this Association commenced on Monday at Haverfordwest, and was continued on the four following days. On Tuesday an excursion was made to Burton and district, and on Wednesday to St. David's. On Thursday objects of interest in Haverfordwest were inspected in the morning, and at midday an excursion was made to Robeston Wathen. On Friday the members were to visit Maenclochog and district, or make an excursion to Llangwarren. Public meetings were held in the Temperance Hall, Haverfordwest, on Tuesday and at the same hour on Friday. At the first-named meeting the President delivered his inaugural address, and, at the second, papers on local history and antiquities were read. We hope to publish a report of the proceedings next week.

HOTEL, ABERYSTWITH.—A new hotel has just been opened at Aberystwith, which has been erected from the designs of Messrs. Ewen and J. Alfred Harper, architects, of Birmingham. The hotel is built of native stone, and is in the Renaissance style

Correspondence.

To the Editor of THE BUILDER.

CARDIFF NEW TOWN HALL AND LAW COURTS.

SIR,—As will have been seen from your advertising columns the two preceding weeks, Cardiff contemplates the erection of a Town Hall and Law Courts on a scale befitting its importance as a centre of wealth and population.

For this purpose the Corporation have lately purchased from the Marquis of Bute a finely-timbered park of some 60 acres. This magnificent site is bounded on its south by the "Feeder," an artificial, but beautiful river by which the waters of the Taff are carried to the docks. There is a singular charm about this rapidly flowing stream, here entirely over-arched by trees, with the lawn and garden around the ruins of the Grey Friars' monastery on the one side and the park aforesaid on the other.

The spot appropriated to the buildings in question is within a stone's throw of "The Feeder," and not three minutes' walk from the centre of the life of Cardiff; yet scarcely a trace of the near neighbourhood of a great town is visible from it. This is partly accounted for by the fact that the grounds of Cardiff Castle bound the park to the west with only a road and canal intervening. It struck the writer on visiting Cardiff that the Corporation had secured an unrivalled site for their future municipal buildings.

It is to be hoped, therefore, that something worthy of the opportunity may result from the competition which has been determined upon for the buildings in question. The time allotted for the work is short, but from the circumstances of the case cannot be extended. The conditions are, I think, more favourable than usual.

A. WATERHOUSE.

20, New Cavendish-street, Portland-place, W.

*** Some of our readers may remember that in the article on Cardiff in our issue of March 13 ("Architecture of our large Provincial Towns: V.") we drew special attention to the beautiful effect of the artificially formed stream the "Feeder," like a canal full of running water, both at the point near the site for the new Town Hall, and at another point more within the town, where it runs past a terrace of small houses. The terms of the competition are, as Mr. Waterhouse truly says, more favourable than usual, and it seems likely to turn out a model competition. In remarking on the need of a new Town Hall, in the article referred to, we observed that "on whatever site the new Town Hall is ultimately built, we have little doubt that an effort will be made to render it a really worthy addition to Cardiff architecture;" and the advertisement of the Corporation is a satisfactory confirmation of our prediction.—ED.

TENDERING.

SIR,—I am one of four builders who were privately invited to tender for a job of about 1,000*l.*, each builder having to take out his own quantities, the result being that my tender was the lowest, although it was not accepted. Can any one inform me whether I can legally make a charge for the trouble and expense I was put to over the matter, which, for the fact of being asked to tender and then not accepting me, although lowest, clearly shows it was for their benefit only? I think it is quite time that the builders combined together to protect themselves in some way against this only too common occurrence. REGAESL.

*** Our correspondent cannot recover anything. An invitation to tender may or may not be accepted, as the builder to whom it is sent may think desirable. It is clearly established by legal decision that a person who invites tenders is not bound to accept the lowest tender. A builder, therefore, who sends in a tender has to run the risk of his time being thrown away if it is not accepted. We take it that the prudent builder discounts the profit on the job in which his tender is accepted by the loss on an unaccepted tender, and that when a business is well managed, the loss of time on an unaccepted "tender" is merely the item on the debit side of the year's trading account.—ED.

FOUNDATION OR COMMEMORATIVE STONES.

SIR,—Apart from technical criticism, probably every visitor to the new Gallery of British Art at Pimlico will admire its handsome and ornate appearance as a whole. But I could not help re-

marking the somewhat mean and altogether inadequate appearance presented by the two commemorative stones; one to the donor, the other to the opener of the building. They form the basis of two columns opposite the entry to readily catch the eye. Yet these, the most important stones surely in the building, appear to be of the commonest material, of a by no means even hard character.

Considering the very object and whole *raison d'être* of such stones, should they not rather be altogether exceptional, not only in place, and design, and size, but also in material? Their purpose is specially to hand down to succeeding generations the names of the founders or builders, in grateful recognition of national benefits conferred. Such being the undoubted case, one would have thought that all architects would have made a special point of seeing this idea carried out. Should they not always be of some costly or precious material, as marble, plain or coloured, granite, or porphyry, or the like? For a single stone, for such an enduring purpose, could any kind be too handsome or too indestructible?

Instead of this obvious arrangement (as it seems to an unprofessional mind), we see these stones of the very commonest material, generally, I suppose, the same as used in the building. I have repeatedly observed this myself in churches, town halls, and other public buildings. It seems to be the exception where anything beyond a common block of building stone was used.

One of the best I remember seeing is the large one in the Ophthalmic Hospital, at Blackfriars Obelisk. It is a fine piece of red granite, with the inscription and two coats of arms well cut and handsomely gilt.

It seems quite an opportunity thrown away of making an interesting and effective little adjunct to the façade or other position. If I had not so often observed this strange oversight, I should not have alluded to the New Gallery instance. CAIUS.

DANTZIC OAK FOR WINDOW SILLS.

SIR,—Will any of your readers state their experience of Dantzic oak in window sills, or say whether they have used with good results any other wood than English oak for this purpose?

Dry English oak is now very difficult to get in large quantities, and unless it is well seasoned it is certain to twist and crack in work. G. T. H.

The Student's Column.

QUANTITIES AND QUANTITY-TAKING.

CHAPTER V.—MODES OF MEASUREMENT.

Setting Stoves.—Average the widths of the openings, and keep various descriptions of stoves separate, stating whether tile cheeks and any special work required.

Setting Coppers.—Give size of copper, and include setting of furnace work, state also size of brick setting and the shape (whether with circular front) and describe whether pointed or faced with any description of brick different to the bulk of the work, or rendered in cement.

Flues Cored and Parged.—If of exceptional lengths take an average, not otherwise.

Chimney Pots, giving size and description, or stating p.c. or l.p., and include the flaunching.

Cramps for Door Frames.—Give size, and length, and description. Although this is smiths' work, it is generally billed in the bricklayer.

Frames Bedded and Pointed.—Keep door and window frames separate, also in sizes as "ordinary" frames, "large" ditto, and "extra large" ditto. "Large" over 24 ft. superficial, and "extra large" over 36 ft. superficial. If over 48 ft. superficial the size should be stated.

It is a good plan as a variation of the foregoing to average the girths of the frames. The girths in the case of door frames being the length of the head and jambs, and in the case of window frames of head, jamb, and sill and put same in one item, keeping, of course, the door and window frames separate. The sills of window frames are usually bedded in white lead.

State whether bedded in lime and hair, or cement and hair, also whether pointed one or both sides, and whether either or both sides next stonework, and if screeded.

Hoop Iron Bond.—This is measured by the foot run, making an allowance for laps, and afterwards weighted, and appears in the bill, in cwts. occasionally a note is inserted at the end of the item in parenthesis giving the number of yards lineal.

Pavings, per yard, Superficial.—If brick:—Give description, state whether flat or on edge, if herring bone, and also whether set in mortar or cement. If laid herring bone take the girth of the room by 3 in. as a superficial dimensions and add to the bulk as an allowance for waste.

If tile:—Give full description both as to size and quality, and state whether laid in mortar or cement. In the case of ornamental and tesselated pavements, give the p.c. price, and include, with the item, for package, carriage, and laying, and take a cement bed for the tiles, giving the thickness. All p.c.s should state to where this price is, *i.e.*, whether at the manufactory or in London or otherwise, to enable the builder to make the proper allowance for carriage. It is also well, even where there is a p.c. price given, to give the description; this gives some clue as to the amount of labour in laying.

State if paving to falls, and take an item of cutting at intersection of falls at *per foot run.*

All rectangular cutting in pavings is included with the item (with the exception above noted) which should state this, and also the fact that the item is "measured net"; but raking, cutting, and waste is taken *per foot run.*

Asphalte, per yard superficial, giving description and thickness, and describing if to falls. Where there are asphalte skirtings, take these at *per foot run*, giving the height and thickness, and note that the joint of brickwork must be raked out for the turn in of the top edge; embody this in the description. Take mitres, &c.; also take asphalte angle fillet at junction of skirting with paving at *per foot run.*

Tile wall lining, per yard superficial. Give size and full description or p.c. as described for pavings. Take the lengths as multiples of the widths of the tiles, include cuttings, or take *net* and take an item *per foot run*, as "cutting and waste at internal angle." Take any items of cutting and fitting as *numbers*, and also take angle beads, cappings, &c., *per foot run*, with the angles, returned ends, &c., as *numbers.*

Facings, per foot superficial, take these as extra over ordinary brickwork over all the surfaces showing, including in reveals, describing the bricks and the pointing both as regards colour and form, also state whether the pointing is done as the work proceeds, or whether the joints are raked out and afterwards pointed.

In gauged work describe whether set in putty or in shellac for carving.

In the case of glazed facings, owing to the great cost of the bricks, it is usual to make an allowance of 2¼ in. at each end of the wall to pay for the extra material for bonding.

With half brick (4½ in.) walls whether faced one or both sides, and one brick (9 in.) walls faced both sides, include also the brickwork, and measure at *per foot superficial.* Keep circular facing separate, giving the radius.

Where, as is sometimes the case, there are bands or quoins of facings varying from the bulk, take these at *per foot superficial* (taking the average width of the quoins by the height) and deduct from the general facing and describe as "in bands" or "in quoins" as the case may be.

It is frequently better to bill the quoins at *per foot run* giving the averages as showing one average face in. wide, or two faces each average in. wide, or one face average in. wide, and return in. wide, as the case may be.

Arches, per foot superficial.—Measure the girth of the soffit by the width and the *average* girth of the face by the height, and describe whether in rings, axed or rubbed and gauged; and also the shape, whether flat, segmental, semicircular, pointed, &c. Note.—Deduct from the facing the area of the face of arch, and describe the arches as "Extra over ordinary brickwork."

Moulded and splayed cuttings, per foot superficial, if over 12-in. girt.

Cuttings, per foot run.—Take "Raking, cutting, and waste" (stating in what facing it occurs), to all rakes (such as gables) where the raking joint is exposed. Cuttings in facing include the cutting 4½ in. through from the face of the wall; therefore, where rough cutting has been taken, deduct the length by this width from the rough cutting. Take a similar item at the springing of arches, except where this is horizontal, as "Raking, cutting, and waste to skewbacks," and the girth of the crown of the arch as "Circular cutting and waste."

Squints and birdsmouths, per foot run.—State the kind of facing in which these occur, and note that in glazed facing, and in bricks that will not "rub," they will have to be purpose made. State the number of moulds required for these (one for each variation).

Moulded angles, splays, &c., to jambs and arches, per foot run, if under 12-in. girt.—State if cut and rubbed or moulded, and give the girths. If moulded and can be selected from catalogue give number and maker's name. Keep circular work separate and *number* mitres, stops, &c.

Molded Strings and Cornices, per foot run.—Take extra brickwork for the projection, and describe these as "extra over ordinary brickwork," deducting the facing for the height of the course or courses. State whether all headers, and describe the pointing. Describe whether cut and rubbed, or moulded, if the latter, and can be selected from catalogue, give the number and maker's name.

A cornice of more than one course is better taken complete as a series giving the height and projection, and stating the number of courses. Frequently a sketch in the margin is advisable in this case. Describe the pointing. If the string or cornice is circular on plan, state this, giving the radius; and, if circular on elevation, as a label to an archway, describe this also, as it is frequently necessary to have narrow bricks to keep a good line. *Number* mitres, returned ends, &c.; also short lengths as in breaks around pilasters.

Plinth Cappings, per foot run.—Take as described for strings, and take the extra brickwork below capping for the projection. It is not usual to increase the footings for this, so, unless otherwise shown or described, take from the footings. *Note* that the length of this extra brickwork is longer at each external, and shorter at each internal, angle, by the projection of the plinth; and that at each external angle there will be an addition, and at each internal angle a deduction, of the facing to the extent of *twice* the projection of the plinth by the height of the facing. *Note* that, owing to the "give and take" of the angles where the plinth runs *entirely* round a building, and where the angles are all right angles, however much broken up by projections, there will never be more than an allowance for four external angles required.

Oversailing Courses, per foot run.—As previously described in ordinary brickwork, but an allowance must be made for facing to underside, and also for the extra at the angles as described to plinths.

Pilasters, per foot run; either take extra brickwork and facing for the projection, and describe the item as "extra labour," giving the width of projection, or take the item as "extra labour and material," giving width, &c., as last described.

Brick Copings, per foot run, and include the *labor and material*, describing the bricks, and if with tile creasing one or both sides, and include cement fillets one or both sides, as the case may be.

Number small items, such as cutting and fitting to stone moulding under 12 in. girt, corbels, window aprons (if small), key blocks, and all those items where a measurement does not give the contractor a proper idea as to the value of the work.

Underpinning.—Measure the individual items for this as previously described, but keep all separate as *in underpinning.* It is usual to include the strutting and planking with the excavatings. In measuring the excavating allow beyond the face of the wall a width of not less than 2 ft. as working space and *deduct* this from the ordinary excavating. Take an item of cutting off old footings and concrete and take on the top of the underpinning a superficial item of the length by the thickness of the wall as "wedging up with slates and cement (or whatever else is particularly specified) on top of underpinning."

It is often advisable to keep all the items of underpinning together at the end of the bill under a heading stating that "The following is in underpinning," and state that the work is to include for being executed in short lengths and also for the strutting and planking and needling and anything required for the safety of the work.

OBITUARY.

MR. WILLIAM TOMKINSON.—The death has just taken place of Mr. William Tomkinson, building contractor, of Liverpool. Deceased, who had reached the age of sixty-two years, joined his father's building firm when a young man, and eventually became senior partner in Tomkinson & Co. This firm has carried out several large contracts in the city. In 1877 Mr. Tomkinson was President of the Liverpool Master Builders' Association, and he occupied the position of President of the Liverpool Amateur Photographers' Association in 1892.

GENERAL BUILDING NEWS.

NEW WORKHOUSES, WILLESDEN, AND GLOUCESTER.—The Willesden Board of Guardians have appointed Mr. Alfred Saxon Snell, F.R.I.B.A., as architect for their proposed new Workhouse, Infirmary, and Cottage Homes. The Gloucester Union Board of Guardians have appointed the same gentleman, along with Mr. Walter B. Wood, of Gloucester, as joint architects to their proposed new Workhouse, Infirmary and Cottage Homes.

CHANCEL AND ORGAN CHAMBER, KNIGHTON PARISH CHURCH.—In 1875-6 Knighton Parish Church was partially restored, but, owing to want of sufficient funds, the chancel had to remain untouched. Now, however, this work has been commenced under the direction of Mr. Pearson, R.A. The estimated cost, with the necessary interior fittings and a new stained glass east window, is 2,600*l.*

ANGEL HOTEL, BRIGG, LINCOLNSHIRE.—The old building, which has stood some centuries, has been pulled down and rebuilt. The new premises comprise commercial and coffee rooms, carriage entrance to the covered courtyard, and buildings in the rear, sitting and bed rooms, with a central balcony on the first-floor. The style adopted is half timber work overhanging the ground story. The ceiling timbers are in view, the windows and door panels are glazed with leaded glass, and all the internal fittings are of a character harmonising with the style of the buildings. The work has been carried out by Mr. H. Dent, from the designs, and under the superintendence of Messrs. Freeman, Son, & Gaskell, architects, of Hull.

ALL SAINTS' CHURCH, SOUTH MERSTHAM.—The foundation stone of this church was laid by Princess Frederica of Hanover on July 26. The building will, when completed, have a nave 70 ft. long by 20 ft. wide, north and south aisles 54 ft. long and 11 ft. wide, north and south transepts 16 ft. long by 15 ft. 6 in. wide, and a chancel 29 ft. long by 20 ft. wide, with an organ recess on each side of the choir. The choir and clergy vestries are at the west end, with a porch and lobby on both the north and south sides. The main entrance at the east end will be under the tower on the north side of the chancel, and there will also be an entrance on the south side. The roof over the nave and chancel will be continuous, without any chancel arch. The aisles have separate gables over each window, the roofs forming an abutment to the walls of the nave. The tower will have a timber spire, covered with oak shingles, and rises to a height of 70 ft. from the ground. The other roofs are to be covered with plain tiles. The style adopted is Early English of a simple character. The walls are to be built with local bricks, without plastering on the inside. Doulting stone is used for the windows and other external work, and Bath stone for the nave piers and responds and for the roof corbels. The church will eventually seat 420 adults, and the part now building will seat 200. The organ is being constructed by Mr. Binns, Bramley, Leeds, and will have hydraulic apparatus to work the bellows. The builder is Mr. J. J. Carrick of Redhill, and the architect is Mr. Henry Hall, of London.

LUNATIC ASYLUM, GRAYLINGWELLS, SUSSEX.—The dedication of the chapel of the new county asylum at Graylingwells, near Chichester, took place recently. The chapel stands to the north and opposite to the main entrance to the asylum. It was designed, like all the other buildings, by the firm of Sir A. Blomfield & Sons. It will seat fully 600 persons, and consists of a nave with aisles, chancel, and recesses on either side for organ chamber and vestry. The nave is divided from the aisles by arcades of four pointed arches with circular piers in Bath stone. Carved oak pulpit and altar are the gift of Messrs. Longley, the contractors. The chancel is paved with mosaic. The chapel will be lighted for evening service by electricity. Externally the building is of flint-work with Bath stone dressings, a bell-turret being set at the junction of nave and chancel.

CHURCH, WEST MONKTON, SOMERSETSHIRE.—The Bishop of Bath and Wells dedicated on the 16th inst. a new church which has been erected at Bathpool, West Monkton. The church, which is situated on the main road from Taunton to Bridgwater, is of Early English style, of Monkton stone, with dressings of Bath stone. The roof is an open timber one. Accommodation is provided for 150 people. Mr. G. C. Strawbridge, of Taunton, was the architect, and Messrs. Leach & Gardner, of Monkton, the contractors.

WESLEYAN CHAPEL, SWYMBRIDGE, BARNSTAPLE.—A new Wesleyan chapel is being erected at Swymbridge, near Barnstaple. The designs have been prepared by Mr. A. Lander, of Barnstaple. The seating accommodation will be for 200, and the cost will be 700*l.*

READING AND RECREATION ROOMS, HALKIN, FLINTSHIRE.—The erection of the reading and recreation rooms at Halkin has now been commenced. The building has been designed by Messrs. Douglas & Fordham, architects, Chester, and the contractor is Mr. A. Lloyd, Flint.

CATHOLIC CHURCH, NEWTOWNBUTLER, COUNTY FERMANAGH.—The new church of the Immaculate Conception, Newtownbutler, County Fermanagh, has just been dedicated by the Rev. Dr. Owens, Lord Bishop of Clogher. Mr. G. L. O'Connor, C.E., prepared the plans. The design is of the Early English period. The church when complete will have cost about 5,000*l.*

FREE CHURCH, INVERNESS.—The memorial stone has just been laid of a new Free Church at Inverness. The architect is Mr. J. Rhind. At present only part of the full plan is being proceeded with, but when the church is ultimately completed, it will give accommodation for between 800 and 900 worshippers. The total cost will be about 5,000*l.*

EXTENSION OF FREE CHURCH, INVERNESS.—The old Free East Church, Academy-street, Inverness, has been remodelled and enlarged, and accommodation is now provided for 1,000 worshippers. The extension has cost over 2,000*l.*, and has been carried out according to plans prepared by Messrs. Ross & M'Beth, Inverness.

ST. MATTHEW'S CHURCH, DOUGLAS.—The new St. Matthew's Church, Douglas, was opened a few days ago. The new edifice is situate at the corner of Ridgeway-street and the North Quay, in the centre of the Douglas Town Improvement Scheme. It has been designed by Mr. J. L. Pearson, R.A., and the style is Early English. The whole of the work has not yet been completed, only the nave, aisle, and the first story of the tower being finished. Messrs. Kelly & Preston, Douglas, were the builders.

SCHOOLS, FULWOOD, LANCASHIRE.—New buildings at Fulwood, known as the St. Vincent Certified Schools, were opened recently. The chief contractor was Mr. Thomas Cottam. The brick and masonry work was carried out by Mr. J. Christian; the plastering by Mr. G. Arrowsmith; and the plumbing and painting by Mr. Parkinson. The architects were Messrs. Sinnett & Powell, of Liverpool, and Mr. J. Price has been the clerk of the works.

CHURCH, COMMONDALE, NEAR DARLINGTON.—On the 11th inst. the foundation stone of a church, which is to be built in memory of Mr. Thomas Chaloner, C.B., was laid at Commondale. The total accommodation provided is for 80 worshippers, at an estimated cost of about 550*l.* The contractor for the work is Mr. William Heckle, of Guisborough. Mr. J. Mitchell Bottomley, of Middlesbrough and Leeds, is the architect.

TOWN HALL, PRESTONPANS.—The recently completed town hall at Prestonpans was opened on the 9th inst. by Mr. R. B. Haldane, M.P. The plans for the building were prepared by Mr. Peter Whitecross, architect, Prestonpans. It is entered from a vestibule with glazed screen, is 60 ft. long, 35 ft. in width, and seated for about 450.

CHANCEL, ST. JOHN'S CHURCH, BUXTON.—On the 10th inst. the Bishop of the Diocese dedicated the new chancel of St. John's Church, Buxton. The structure has been in course of erection for some months past, under the superintendence of Sir Arthur Blomfield & Sons, from whose designs the work has been carried out. The contractors were Messrs. Cornish & Gaymer, of North Walsham. The east wall of the church was removed and rebuilt between the columns of the east portico, the space thus gained being divided so as to give a wide open space for choir and clergy, surrounded by a low wall supported by a flight of three steps. To the centre is the sanctuary, and on the north side the clergy vestry, while on the south side is a porch for Bath chairs. The new altar is seven steps above the nave floor level. The east window is by Mr. C. E. Kemp, of London. The centre light contains a representation of the Crucifixion, with St. Mary and St. John on either side. The choir and clergy stalls are carved in oak.

CHURCH SCHOOLS, GILDERSOME, YORKSHIRE.—The new church schools in the parish of Gildersome were opened recently. They occupy a position in Town-street. Accommodation is provided in the new structure for 340 scholars, and the large schoolroom will accommodate 600 persons when utilised as a public assembly room. The building comprises a mixed schoolroom 75 ft. by 30 ft., with separate class-rooms for girls and infants and for boys. The outside walls are faced with stone from Morley quarries, with Horsforth stones for the ashlar dressings. The cost of the buildings, together with the furnishing, will be about 2,500*l.* Mr. J. P. Kay, of Leeds, was the architect. The works have been carried out by the following contractors:—Mason, Mr. Tom Houldsworth, Gildersome; joiners, Messrs. C. Murgatroyd & Son, Idle; slater, Mr. W. Atkinson, Leeds; plumbers, Messrs. J. Booth & Son, Dudley Hill; plasterer, Mr. Edward Wilson, Morley; painter, Mr. Wilfrid Davison, Calverley. The ornamental ironwork has been supplied by Mr. W. Wharam, Leeds.

EXTENSION OF REIGATE AND REDHILL COTTAGE HOSPITAL.—The foundation stone has just been laid of an extension to the Reigate Cottage Hospital. The architects are Messrs. Baker & Penfold, Reigate, and Mr. R. Killick is the builder.

NEW CHAPEL, TIBSHELF, DERBYSHIRE.—A new chapel is being erected at Tibshelf for the use of the United Methodist Free Church body. The site of the building is in Addison-street, and when completed will provide accommodation for 600 persons. The architect is Mr. A. E. Eyre, of Codnor.

SCHOOL, CULTS.—On the 16th inst. the new school at Cults was opened by Mr. J. L. Geddes, Chairman of the Peterculter School Board. The new school is built of grey granite, with dressed features, and has accommodation for 350 pupils. The cost is about 4,500*l.* Mr. R. G. Wilson, Aberdeen, was architect, and the contractors were—Mason work, George Hall, Aberdeen; carpenter, Webster Brothers, do.; plasterer, David Scott, do.; plumber, John Thom, do.; slater, Andrew Kincaid, Culter; painter, J. Mason & Son, Aberdeen.

ALTERATION TO BATHS, WEST BROMWICH.—Mr. Albert J. Hepper held a Local Government Board inquiry at West Bromwich on the 17th inst., concerning the application of the West Bromwich Town Council for sanction to borrow 2,100*l.* for the purpose of carrying out alterations and additions to the Public Baths, 300*l.* for the erection of an engineer's house, and 1,149*l.* for the provision of a technical school.—The Borough Surveyor (Mr. A. D. Greatorex) submitted plans of the scheme, and pointed out that it was intended to extend the first-class swimming bath, and also improve it by putting up a gallery.

HOTEL, SWANSEA.—Messrs. Thomas Watkins & Co., Limited, Swansea contractors, have commenced their contract for rebuilding the George Hotel, in Wind-street. The architects are Messrs. Perry & Reed, of London, and the contract price is 21,000*l.*

LLANDRINDOD WELLS COUNTY INTERMEDIATE SCHOOL.—This school which is now being erected is situated on the right hand side of the road leading to Builth. Accommodation is provided for forty boys and fifty girls in four class-rooms of varying sizes. There is also an assembly hall in which the whole of the students can be assembled at one time. A feature of the building is that two of the class-rooms are separated from the assembly hall by movable partitions only, which can be thrown open, and the whole of the space occupied by the assembly hall and two class-rooms can then be used as one large room, 64 ft. long, for entertainments, &c. Separate entrances to the school buildings, with cloak-rooms and lavatories adjoining, are provided for each sex, as well as exits to the playgrounds, and latrines. Private rooms for masters and mistresses, with lavatory accommodation adjoining, are situated off the main corridors. The technical department consists of physical and chemical laboratories for boys and girls, with balance-room attached, and a large cookery-room and laundry for girls only. The style is Renaissance, simply treated with Ruabon red brick facings and Grinshill stone dressings. The roofs are covered with Portmadoc slates and red tile cresting, and an oak ventilating turret surmounts the main roof. The various rooms will be lighted with the electric light. The work is being carried out by the contractors, Messrs. W. Bowers & Co., of Hereford, from the plans and under the superintendence of the architect, Mr. H. Teather, of Cardiff.

UNIONIST CLUB, ABERDEEN.—A new Unionist Club is to be erected at Aberdeen, from the designs of the architect, Mr. A. H. L. Mackinnon. The club buildings, which are to be erected at a cost of between 9,000*l.* and 10,000*l.*, will have frontages to Union-terrace, Skene-terrace, and North Silver-street. The buildings, which will be of three stories, will be Renaissance in style, and are to be built of white Kemnay granite.

BUSINESS PREMISES, BIRMINGHAM.—The block of premises forming the lower part of Cannon-street and Needless-alley is to be demolished, together with the three shops between the two thoroughfares in New-street, and new premises are to be erected at a cost of about 20,000*l.* The property is one of the most ancient pieces of old Birmingham existing in the centre of the city. The new buildings will be erected in accordance with the plans of Messrs. Essex, Nicol, & Goodman, architects, of Birmingham. Provision is made for four shops fronting New-street, to occupy the space of the three original buildings. They will extend to about half the depth of the site—namely, 80 ft. The shops are to include the ground floor, a mezzanine floor, and first, second, and third stories, the central portion over the two middle shops being continued as an extra story to form an ornamental gable. In Cannon-street there will also be room for four shops about 70 ft. in length, and running through to Needless-alley, but so arranged as to be capable of subdivision, and the portions with frontages to Needless-alley let independently if necessary. Over the shops will be built three floors, which, together with the upper stories in New-street, will be let for professional and other offices, and approached from a staircase entrance in Cannon-street. The basements, access to which may also be obtained from Cannon-street, are to be so arranged that they, too, may be let apart from the shops.

CATHOLIC CHAPEL, CARNMONEY, BELFAST.—The new Roman Catholic chapel erected in Carnmoney, and which has been named St. Mary's-on-the-Hill, was dedicated by the Roman Catholic Bishop of Down and Connor on the 15th inst. The building measures 92 ft. in length by 32 ft. in width. It is built in the Early English style, the materials used being selected local stone, relieved with Dungannon sandstone dressings to doors, windows, and buttresses. It is entered on the western side by a recessed doorway in the tower, with inner doors to nave, which is lighted by seven lancet windows, with cusped heads, together with two large two-light tracery windows in front gable. All the windows of the chapel are filled with cathedral glass of selected design. The woodwork used in the building is of selected pitch-pine. Mr. J. J. O'Shea was the architect, and Mr. John Fegan the builder.

MUSIC HALL, PADDINGTON.—On the 17th inst., Mr. John Aird, M.P., laid the foundation stone of the new Metropolitan Theatre of Varieties, Edgware-road. The new building will stand on the site of the old house. A part of the original structure has been preserved, but the auditorium will be reconstructed, and the seating capacity of the house will be increased to 3,000. The stage will be enlarged, and new dressing-rooms provided. An entirely new frontage is to be erected. Mr. Frank Matcham is the architect.

SANITARY AND ENGINEERING NEWS.

PROPOSED BRIDGE OVER THE ST. LAWRENCE.—The construction of a long span bridge over the St. Lawrence River at Quebec has been discussed for many years, but until recently no very great interest has been taken in the scheme. Two designs for the structure are now, according to the *Engineering Record*, under consideration, the first being for a cantilever bridge, the central opening for which would be 1,446 ft. long. There would be two side spans, each 560 ft. long, making the total length of the structure 3,360 ft., and it is proposed that this bridge should cross the river a few miles above Quebec. Provision would be made for a carriage way as well as a double line of rails, the level of which would be about 150 ft. above high water. The estimated cost of the work is three-quarters of a million sterling. The second project is by the City Engineer of Quebec, and is almost the same as he proposed some forty years ago. In this case the structure would be 4,800 ft. in length, composed of two end spans of 600 ft long and three suspension spans of 1,200 ft. each, supported upon piers built on caissons, sunk by the pneumatic process. This bridge which is estimated to cost rather more than a million sterling, would be for a double line of rails, and would also be constructed to carry a carriage way.

RESERVOIR, PERTH.—A new reservoir, situated about three miles to the south-west of Perth, and adjacent to the present reservoir, was opened on the 9th inst. by Lord Provost Dewar. The work, designed and carried out under the instructions of Mr. Alexander Davidson, water manager, Perth, was executed by the contractor, Mr. Peter Girrity, Dundee. It is erected on the Burghmuir, about 2½ miles from the pumping station, and at an elevation of 320 ft. The size of the reservoir is 121 ft. square by 21 ft. 9 in. deep. The reservoir when full holds 1,956,084 gallons.

DRAINAGE OF LIVERSEDGE, YORKSHIRE.—On the 10th inst. an inquiry was held at Liversedge by Mr. W. O. E. Meade-King, on behalf of the Local Government Board, with reference to an application of the District Council for sanction to borrow 9,706*l.* for drainage purposes, and 3,000*l.* for the purchase of land and the provision of a refuse destructor. Mr. Mitcheson, clerk to the Council, stated the facts bearing upon the application, and evidence in support was given by Mr. Charles Gott, C.E., of Bradford; Mr. Godfrey Horsfall, Surveyor to the Council; Mr. S. Simkinson, architect and surveyor; Mr. Ernest Sykes, a representative of the Horsfall Refuse Destructor Company; and others. The drainage works contemplated are in the Old Corn Mill-lane, Liversedge Hall-lane, Leeds-road, Valley-road, and Huddersfield-road, and will practically complete the drainage of the township, upon which, with outfall works, about 40,000*l.* has already been spent.

BILSTON WATERWORKS.—The Chairman of the Bilston Urban District Council (Mr. R. A. Harper) opened recently the waterworks buildings at The Bratch, Wombourn. The water now being supplied to Bilston from Wombourn is drawn from the red sandstone strata, 150 ft. below the surface. Two wells have been sunk at the locality known as The Bratch, and the water is pumped through these, and then forced along iron pipes to a covered reservoir situate on the south-western slope of Goldthorn Hill, Wolverhampton. From this reservoir the water travels to Bilston by gravitation. There is a rise of about 300 ft. from The Bratch to Goldthorn Hill, and a slope of varying degree from the latter place to Bilston and Coseley. The premises at The Bratch include engine-house, well-house, boiler-house, machine fitting and repairing shop, and stores. The plant includes two boilers, two engines, and two sets of pumps, with the usual accessories. All the machinery is in duplicate, to prevent the cessation of supply in case of breakdown. The total cost of the scheme is 45,000*l.* The whole of the work has been designed and carried out by Mr. Baldwin Latham, of Westminster. Mr. C. L. N. Wilson (Town Surveyor of Bilston) has acted as resident engineer, with surveillance over all the work. The work has been apportioned among the following contractors:—Messrs. H. Willcock & Co., Wolverhampton, buildings at The Bratch; Mr. John Hughes, Dudley, construction of the wells; Messrs. Thorneywell & Wareham, Burton, the engines; Mr. Herbert Holloway, Wolverhampton, the pipe track; Mr. Henry Roberts, Swan Village, the Wombourn mains; and Mr. Henry Hill, Maidenhead, the reservoir. The length of the mains from Wombourn to Bilston is about 6¼ miles.

SEWERAGE SYSTEM, DOUGLAS.—At a special meeting of the Douglas Town Council recently, the plans of the scheme of Messrs. Stevenson & Burstall, of London, for the reconstruction of the Douglas sewerage system, at a cost approaching 50,000*l.*, were approved. The tender of the Stanton Ironworks Company, Limited, Nottingham, for the supply of iron pipes in connexion with the scheme, for 3,481*l.* 11s. 3d., was accepted.

PROMENADE IMPROVEMENT, BLACKPOOL.—The Borough Surveyor of Blackpool has submitted to the members of the Council a scheme for the widening of the promenade. The scheme provides for a footpath 10 ft. wide on the east side; a carriage way of 55 ft.; an island footpath 10 ft.; a raised tract for a double line of trams, 20 ft. 9 in.; and a promenade footpath of 42 ft. The total estimate is about 350,000*l.* The scheme is divided into three sections, the respective cost of each being 117,896*l.*, 9,866*l.*, and 132,424*l.*

STAINED GLASS AND DECORATION.

WINDOWS, ST. SAVIOUR'S, CHEETHAM, MANCHESTER.—This church, erected by the late Mr. Crowther, of Manchester, has just received five new stained glass windows, in which the object aimed at was a mosaic of colour. They are, therefore, very much broken up. The subjects are the four Evangelists and our Lord as Priest and King. The artists were Messrs. Percy Bacon & Bros., of London.

WINDOW, GRANTHAM CHURCH, LINCOLNSHIRE.—At the Parish Church at Grantham a stained-glass window has just been inserted, the work being carried out by Mr. C. E. Kemp, of London. The figures are four of the great fathers of the Church—St. Ambrose, St. Jerome, St. Gregory, and St. Augustine.

MEMORIAL WINDOWS, THORPE ACHURCH CHURCH, NORTHAMPTON.—As a memorial to Lord Lilford there has been erected at the Church of Thorpe Achurch a stained east window, also two smaller windows at the west end. The windows were made by Messrs. Powell, Whitefriars, London.

MEMORIAL WINDOW, WINCHESTER CATHEDRAL.—The south window of the Lady Chapel at Winchester Cathedral, which has been filled with stained glass as a memorial to Bishop Anthony Wilson Thorold, eighty-fourth Bishop of the Diocese, was dedicated on the 14th inst. The window, which is by Mr. C. E. Kemp, contains representations of scenes in the life of our Lord in which the Virgin Mary appeared, and of scenes in the lives of the Saints. At the bottom of the window are an inscription, the arms of the See, and Bishop Thorold's family arms.

WINDOW, CONINGSBY CHURCH, LINCOLNSHIRE.—A stained-glass window, by Messrs. Clayton & Bell, has just been placed in the chancel of Coningsby Church. The subject of the window is "Martha and Mary," with a scene below representing "The Raising of the Widow's Son."

FOREIGN.

FRANCE.—The manufactory of Sèvres has been producing a certain number of busts of the Emperor and Empress of Russia, which the President of the Republic is to offer to their majesties. The President also takes with him a laurel branch in hammered gold to place on the tomb of Alexander III.; it has been executed by the Maison Falize, and is a most delicate bit of artistic workmanship.——M. André Bouillet, the painter, is commissioned to go to Russia to sketch one of the fêtes to be given at St. Petersburg in honour of M. Faure, with a view to a picture at next year's Salon.——The Leprince prize at the Ecole des Beaux-Arts has been awarded to M. Gegoffin, sculptor, and to M. Duquesne, architect; the latter has also been the recipient of the Delaunoy prize. The Pigny and Lusson prizes have been awarded to M. Garnier, and the Cambacérès prize to M. Roger as painter and to M. Magrou as sculptor.——The new Law Schools designed by M. Lheureux are to be opened in November.——M. Schuler has been nominated architect-in-chief of "Monuments Historiques" for the departments of Vosges and of Meurthe-et-Moselle.——MM. Morin-Goustiaux and M. Le Cardonnel have obtained the premiums in the international competition opened by the Municipality of Trieste for plans for a lunatic asylum in that town.——The restoration has just been completed of the Louis XIII. portion of the Château d'Amboise, left by the Duc d'Aumale as a home for his former dependents or servants. The complete restoration of the Chateau will be completed in 1899, so that our readers who want to see it had better do so at once.——It appears that the town of Rouen has entered into negotiations with M. Lenoir, the sculptor, to produce them a fine equestrian statue of Joan of Arc.——M. Heubès, architect has been commissioned by the municipal council of Saint-Dié (Vosges) to design and carry out a new church to be built on the site of the ancient church of St. Martin.——M. Choret, Inspecteur des Bâtiments Civils, has just completed the construction of the College of St. Germain-en-Laye, a building of monumental aspect and admirably planned. It has cost about 1,100,000 francs.——The death is announced of M. Lépine, an old Paris architect.

BULUWAYO.—The Association of the Master Builders and Bricklayers, at Buluwayo, met on July 6, when an arrangement was agreed to whereby fixed rates of wages will be paid for periods of not less than six months; and also that if either party wish for an alteration they must at the completion of the term give the other six weeks' notice in writing of their determination. The bricklayers' wages for the ensuing six months have been fixed at 30s. per diem.

GERMANY.—The new Treasury Buildings at Munich have now been completed from the designs of the Court Architect, Herr von Hofmann, and the modern appliances which have been used in its equipment are considered to be particularly practical.——Considerable works are being taken in hand at Hamburg in connexion with the harbour of 1888. About 300,000*l.* is to be spent during the course of the next few years on warehouses and sheds, besides another 600,000*l.* which was voted last month, for embankments, locks, &c.——A number of Government architects have received State travelling studentships to the amount of 90*l.* each, and a number of architects' assistants have received similar studentships at a value of 45*l.* each.——Among the architects who have received distinctions at the Munich International Art Exhibition we notice that Mr. Cuypers, of Amsterdam, has received a first medal, and that a second medal has been awarded to Messrs. Emmanuel Seidl, Martin Duelfer, and Hocheder, all of Munich.——We regret to record the death of another important official in the Railway Works Department of the Prussian Government. Herr Herman Franz, who held the title of Geheimer Ober-Baurath, died, according to the *Centralblatt der Bauverwaltung*, at the age of seventy. He had held a number of important positions.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. Archibald D. Dawnay, of London and Cardiff, has converted his business into a limited company, the present members of which are himself and three sons, a brother, and a manager, who have for some years assisted him in the business. Mr. Archibald D. Dawnay will be consulting engineer and managing director.

ABERDEEN NEW GENERAL POST-OFFICE.—Official intimation has been made to the Town Clerk that the Postmaster-General has purchased, as a site for the new General Post-Office in Aberdeen, a piece of ground extending from Dee-street to Crown-street. A fully-equipped East End office will also be provided. The new site measures 3,200 square feet, and the cost is 14,000*l.*

ELECTRIC LIGHTING AND STREET IMPROVEMENTS, SUNDERLAND.—On the 11th inst., at the Sunderland Town Hall, Mr. W. O. E. Meade-King, M.Inst. C.E., Local Government Board Inspector, held an inquiry into the subject-matter of the Council's application for power to borrow 2,300*l.* for electric lighting purposes and 16,275*l.* for street improvements. There were present—Mr. F. M. Bowey (Town Clerk), Mr. R. S. Rounthwaite (Borough Engineer), Mr. J. F. C. Snell (Borough Electrician), and others. Mr. Snell said the Electric Lighting Act was adopted in 1894, the area being the borough, which covered 3,875 acres. The extension proposed was mostly needed for private lighting, although some of the streets were to have lights. They were going to place forty-eight public arc lamps of 600 nominal candle-power. At present there were but two arc street lights, compared with 13,275 eight candle-power private lights.

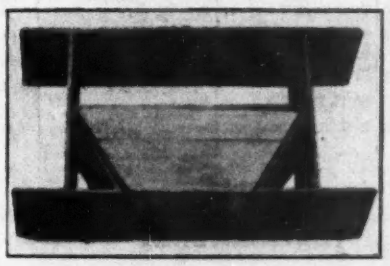
YORKSHIRE MASTER BUILDERS.—A meeting of master builders was held at the Queen Hotel, Huddersfield, recently, in order to consider the advisability of forming a federation of the masters of the county. Those present included masters from most of the Yorkshire cities and towns. A deputation from the Lancashire Federation of Master Builders attended and explained the objects of such an amalgamation as that proposed, emphasising the success that had attended its working in Lancashire. Since its establishment, it was stated, strikes had been less frequent, and the relationship existing between masters and men had been greatly improved. After hearing the remarks of the deputation, the meeting decided in favour of the desirability of forming a federation of the masters engaged in the building trades in the county of Yorkshire, and steps were taken in the direction indicated, preliminary rules being adopted on the basis of those in operation in connexion with the Lancashire federation. The idea of the promoters, as expressed at the meeting, was to promote loyalty amongst contractors throughout the county, to secure uniformity of action in regard to contracts, and other matters of interest to the trade, and also to secure the better conduct of working rules with the operatives. It was decided to hold the next meeting at Leeds, in September.

ASSISTANT BURGH SURVEYOR, ABERDEEN.—A special meeting of the Finance Committee of the Town Council was held on the 13th inst., to consider the relationship of the office of City Architect to the Burgh Surveyor's department, and the matter of the filling up of the vacancy caused by the resignation of Mr. Lynam, Assistant Burgh Surveyor. A long discussion took place as to whether the architectural work of the Surveyor's department should be done in that department, or in a department by itself, some of the members contending that the architectural work burdened the Surveyor's department, and should not come under the supervision of

that department at all. Treasurer Bisset moved that the duties pertaining to the office of Burgh Surveyor were so separate and distinct that it was inexpedient, in the opinion of the Committee, to combine them, and that the Committee recommend the Council to proceed with the appointment of an Assistant Surveyor, and that the question regarding the office of City Architect be deferred for further consideration. Baillie Edwards seconded. Mr. Fleming moved to the effect that the Committee recommend to the Council to establish a separate department to take over the duties of the City Architect, and with this view proceed to the appointment of an Assistant Burgh Surveyor. Mr. James Gray seconded. On a vote, the Treasurer's motion was carried by 7 to 4. The meeting appointed to the vacant office of Assistant Surveyor Mr. Gordon, at present on the Surveyor's staff. It was agreed that the Committee meet the following week to consider the matter of the City Architectship.

UNSUCCESSFUL CLAIM AGAINST AN EMPLOYER.—The Judge of the Rochester County Court and a special jury on the 14th inst. investigated a claim for 300*l.* made by a journeyman carpenter named Varrall against his employer, Mr. Charles E. Skinner, a builder, of Chatham, for the loss of four fingers while at work at a circular saw, which the plaintiff alleged was defective. After hearing evidence, the jury returned a verdict for the defendant, being of opinion that the saw was in good condition, and that the accident arose through the plaintiff's handling the wood and saw unskilfully. The Judge said he was glad that by a recent Act of Parliament such cases would be settled by arbitration in future.

A NEW FIXING BRICK.—This is an invention for substituting something fireproof for the ordinary wood fixing-block or plug, especially in brickwork in the vicinity of flues. It consists of a framework of iron divided into two compartments. The back space may be filled in with any fireproof material, while the front portion holds a wooden block, which can be nailed or screwed into in the usual manner. It is also suitable for suspending tele-



graph wires in tunnels, and for firmly securing to walls such things as heavy advertising boards. All that is necessary to be done is to take out an ordinary brick and replace it with the new fixing-brick. But the principal value of the invention, which we think a good one, is that it can be inserted into chimney breasts for holding the skirting boards, as the fireproof cement protects the fixing-block and all adjoining woodwork from the fire of an overheated chimney. The patentee is Mr. W. G. Spratly, of Hammersmith.

DARLINGTON MASTER PLUMBERS.—The master plumbers of Darlington and district met in the Mechanics' Institute recently to consider the advisability of forming an association, to be affiliated with the National Association of Master Plumbers of Great Britain and Ireland. Mr. A. E. Biggs, of Leicester, and past President of the parent association, addressed the meeting at some length, pointing out the importance of unity among a body of tradesmen like the plumbers. Sub-contracting of plumbers' work was unanimously condemned, the opinion being expressed that there should be no one to come between the architect and the plumber. A strong feeling prevailed that all drainage about a dwelling house should be dealt with by an experienced plumber, not only in the mansion, but also in the cottages of the poor, and houses of the mechanic. The necessary formalities having been gone through for the establishment of an association and affiliation with the head department, the officers were elected for the year.

CORNWALL COUNTY COUNCIL.—Mr. Sylvanus Trevail, who has been for some time past the efficient and energetic Chairman of the Sanitary Committee of the Cornwall County Council, has retired from the Council in consequence of his appointment as architect for the additions to the County Asylum, but he has promised his assistance in sanitary matters as before.

PENRHYN QUARRIES.—The negotiations in connexion with the disputes at these quarries seem at last likely to be successful, and we trust within the next few days to hear of a settlement, the bulk of the men being most anxious to return to work, having been on strike eleven months, and lost about 150,000*l.* in wages. Trade continues very brisk, but the reopening of the Penrhyn quarries will displace a large proportion of the foreign slates now being imported.

PETERHEAD BUILDING TRADE.—A meeting of masons, carpenters, plumbers, painters, blacksmiths, and others concerned in the building trade in Peterhead, was held in the Palace Hotel there recently for the purpose of forming a building trade Association. It was resolved to form an association with Mr. William Stuart, builder, as President; Mr. John Stuart, plasterer, as Secretary; and Mr. John Ferguson, plumber, as Treasurer. The aims of the Association are to put every tradesman on the same level in making estimates for work by the adoption of schedules. Hitherto most of the new work in and about Peterhead has been undertaken from plain measurement and specification, but the trade in all departments have resolved now to insist upon schedules, so that "extras" may be executed at scheduled prices.—*Aberdeen Journal.*

CAPITAL AND LABOUR.

PAISLEY PLUMBERS' WAGES.—An agreement has been entered into between the masters and co-operative plumbers in Paisley whereby an increase of wages of ½d. per hour has come into force. The minimum wage is now 9d. per hour, and the working week consists of 51 hours.

BELFAST PLUMBERS' STRIKE.—The plumbers' strike which has been going on in Belfast during the past six weeks was amicably settled on the 14th inst. A meeting of the employers was held at which a deputation of the men attended. The various points in dispute were discussed at length, and as a result of the conference the men are to receive an advance in wages of one halfpenny per hour, and an arrangement was come to with regard to the apprentice question. As a set-off to the concessions made by the masters the men have conceded several points required by the employers. The men who were on strike numbered nearly 300.

THREE TOWNS' BUILDING STRIKE.—The second step towards the complete settlement of the strike in the Three Towns building trade has been arrived at. The dispute with the carpenters was the first to be smoothed away. Now it is the plasterers' turn, and the labourers are alone left in the field against the masters. Several meetings between the Plasterers' Society and the Master Builders' Association have taken place lately, and chiefly as a result of a concession on the part of the men, by which employers are permitted to take an extra apprentice on during the last six months of the service of their eldest apprentice, the Association have agreed to the terms of the plasterers. The strike, so far as this body is concerned, has lasted fifteen weeks, although during the past eight weeks it has been merely the semblance of a dispute, as the branch has only recorded an average of eight men on strike, the numbers at times having dwindled down to two or three. Strike pay has been given at the rate of 24*s.* per week.—On the 14th inst. the Master Builders' Association received a small deputation from the labourers to discuss the advisability of a settlement of their case. The meeting was the result of a suggestion by Mr. Brabham, secretary to the West of England division of the Gasworkers' and General Labourers' Union, and who has been conducting the strike for the labourers. The Association agreed that labourers could be given the increase of wage asked for at the option of employers. They refused, however, to recognise 5½d. an hour as the current rate, or to bind themselves in any way. The men's representatives did not receive the offer with satisfaction, but it is understood that it will be acquiesced in. Several masters who have labourers working for them at less than 5½d. an hour have expressed their intention of raising wages in certain cases.—*Western Morning News.*

MASONS' LABOURERS' STRIKE, HUDDERSFIELD.—On the 14th inst. a meeting of the representatives of the Master Masons and those of the Masons' Labourers' Union was held at the Cherry Tree Hotel, Huddersfield, with the view of coming to a settlement if possible. It is stated that after discussing the points in dispute the masters undertook to concede the ½d. an hour advance, and a code of working rules was agreed upon, the labourers' representatives undertaking to withdraw what were put forth as "suggestions," not as "demands," and what were regarded by the master masons as objectionable.

STRIKE OF BRICKWORKERS, OLDBURY.—One of the largest strikes ever experienced in the Black Country brick trade has, it is stated, commenced at Oldbury. About 800 brickworkers have ceased work for an advance in wages of 20 per cent. The men complain that the employers have refused to concede any advance whatever, and have declined to meet the men or their representatives in conference. The female workers in Oldbury district receive only 13*s.* 4*d.* for making 18,000 bricks, which are sold for 30*s.* per thousand, and therefore the men consider that the wages should be increased.

JOINERS' STRIKE, KILMARNOCK.—The operative joiners of Kilmarnock have come out on strike. Three months ago they applied for an advance of ½d. per hour, the present wage being 8d. The employers have replied through their secretary that the state of trade does not warrant an advance.

THE BUILDING TRADE IN LEITH.—The masons in Edinburgh and Leith struck work about a fortnight ago for a reduction of hours to forty-five per week. While a number of small firms granted the demand, the larger ones held out. On the 17th inst. the situation was complicated by the carpenters and joiners having made a similar demand. They ask that the new arrangement should come into force when the present arrangement terminates.

LEGAL.

THE CORPORATION OF SOUTH SHIELDS AND BUILDING PLANS:

APPLICATION TO A DIVISIONAL COURT.

MR. R. C. GLENN, on the 12th inst., applied to a Divisional Court of Queen's Bench, composed of Justices Lawrance and Collins, on behalf of Mr. Thomas Edward Davidson, for a rule nisi for a *mandamus* calling upon the Corporation of South Shields to approve certain plans of buildings which the applicant proposed to erect. The plans were disapproved by the Corporation on the ground that no back street was provided to give a second access to the proposed buildings, and that certain cesspools were not indicated. Counsel stated that no mention of such requirements could be found in the by-laws.

Mr. Justice Collins asked whether the *mandamus* ought not to be for the Local Authority to re-hear the applications, and not for them to come to a particular conclusion and approve the plans.

Mr. Glenn replied that the Court could make the order asked for, and referred their lordships to the cases of Regina *v.* The Corporation of Newcastle, and Regina *v.* The Teignmouth Rural District Council, in which the Court granted a rule for a *mandamus* to compel the respondents to approve plans.

Their lordships accordingly granted a rule nisi.

THE LONDON BUILDING ACT.

ON the 10th inst., at the South-Western Police-court, Mr. Francis gave a decision in a summons against Mr. J. L. Schiefer, a builder of Grove Mansions, Clapham Common, issued at the instance of the London County Council. The defendant was fined 10*s.* last March for erecting wooden structures at the rear of the mansions without the leave of the Council. As they were still allowed to stand he was further summoned for the recovery of the cumulative penalties. That summons, however, was dismissed, the magistrate being of opinion that the Council had proceeded under the wrong section of the Act. The Council accordingly issued a summons under Section 170, the effect of which is a magisterial order empowering the Council to enter the premises and demolish the illegal structure, and charge the defaulter with the expenses.

Mr. Chilvers supported the summons for the Council, and Mr. W. R. Warren, the defendant's counsel, raised the plea that his client, having parted with the property since his conviction in March, had no longer control over the structures.

The magistrate said the section of the Act clearly intended to reach the premises without reference to the owner or the occupier. Certain buildings were condemned, and the important thing was to demolish them. If the defendant would not do it, no question of ownership could stop the Council from carrying out the order of condemnation. He gave his decision in favour of the Council with two guineas costs.

On the application of the defendant's counsel, his worship agreed to grant a case for the consideration of a higher court.

MEETINGS.

SATURDAY, AUGUST 21.

Devon and Exeter Architectural Society (Plymouth, Devonport, and Stonehouse Branch).—Excursion to Cothele House. Leave Promenade Pier, Plymouth, 2.45 p.m.

Northern Architectural Association.—Students' Sketching Club excursion.

MONDAY, AUGUST 23, TO SATURDAY, SEPTEMBER 4.

Laundry, Engineering, and Horseless Carriage Exhibition.—Agricultural Hall. Exhibition open from 10 a.m. to 10 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

19,419.—ARTIFICIAL STONE: *A. McLean.*—In order to produce an artificial York "flagstone," inventor grinds inferior qualities of York stone to a fine powder, mixes this with Portland cement or other material, and subjects to great pressure in porous moulds.

21,172.—PAINT AND OTHER BRUSHES: *A. C. Kugler.*—To secure ferrule without riveting or compressing it, inventor make a small hole transversely through shouldered portion of handle, passes a steel wire through, and turns down ends. Brushes are tied firmly round core at outer end of shoulder; ferrule is then pushed over bristles.

21,336.—WINDOWS AND THEIR FRAMES: *J. McNab.*—Inventor claims in connexion with sliding and hinged sash windows, hinges for lower sash with engaging bolts, a device for securing detachable window cords, an angle piece, &c.

757.—TILE MANUFACTURE: *W. Hewitt.*—Invention consists essentially in an improved apparatus for the manufacture of tiles, wherein a circular block, having a series of ribs or projections upon its surface for forming undercut recesses in tiles, is arranged to have a slight rotary motion on its axis to disengage said rib from the recesses which they form in the tiles. Modifications are detailed.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Meat Market and Abattoir	Leeds T.C.	100l.; 50l.; 25l.	Oct. 8
Town Hall and Law Courts	Cardiff Corp.	600l.; 300l.; 200l.	Dec. 4
*Two Libraries	Lewisham Vestry	25 gns for each	No date

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Dispensary, &c. Folly Hill, Aghalee	Lurgan Union	E. J. Donaldson, Clerk's Office, Lurgan	Aug. 23
Shop Premises, Roundhay	J. Staines	T. Winn, 90, Albion-street, Leeds	do.
Two Semi-detached Villas, Redruth	R. Dunn	R. W. Collins, Penryn-street, Redruth	do.
Drainage, &c. Works	Whitefield U.D.C.	T. Thorp, C.E. Whitefield	do.
300 tons of Bessemer Steel Girder Tramway Rails	Salford Corporation	Boro' Engr. Salford	do.
Eleven Cottages, Melksham		E. Gunstone, Shurnhold, Melksham	do.
Erection of a Villa, Carbis Bay		A. C. Jenkin, 3, Parade-passage, Penzance	
Police and Fire Station, Werneth	Oldham Corp.	Winder & Taylor, Archts. Priory Chambrs Union-st. Oldham	Aug. 24
Nineteen Police and Firemen's Dwellings, Werneth	do.	do.	do.
Warming School, Wood-street	Walthamstow Sch. B.	W. A. Longmore, 7, Great Alie-street, Whitechapel	do.
Road Works, Upper Saltly	Birmingham Corp.	J. Price, City Surv. Birmingham	do.
Sewer Works, Greenfield-terrace and Alum Rock-road	do.	do	do.
Detached Villa, Aberdare	R. Howells	Watkin & Davies, 4, Canon-street, Aberdare	do.
Fish Market Extension, Brixham	Brixham U.D.C. (Harbour Com.)	W. P. Stark, Clerk to Council	do.
Painting, &c. Ironwork, Seacombe Ferry Pier	Wallasey U.D.C.	F. Ash, Ferry Manager, Egremont	do.
Junior School, Scarborough-street	Kingston-upon-Hull U.D.C.	W. Botterill, 22, Parliament-street, Hull	Aug. 25
Bridge, Glyncorrwg	Glyncorrwg U.D.C.	J. Howell, Surv. Glyncorrwg	do.
Painting, &c. Bath Hospital and Rawson Convalescent Home, Harrogate	Committee of Management	R. Shaw, Secretary	do.
5,300 lineal yards of Brass Tubing	Harrogate Corp.	S. Stead, Boro' Surv. Harrogate	do.
Sewerage Works	Lancaster R.D.C.	J. E. Parker, Post Office-chambers, Newcastle	do.
Sunday School and Institute, Morley		C. Gott, 8, Charles-street, Bradford	do.
Alteration, &c. to Warehouse, Church-street, Dewsbury		Holtom & Fox, Westgate, Dewsbury	do.
Offices, Clonmelton, co Westmeath	Very Rev. W. Healy, P.P.	W. Byrne, 20, Suffolk-street, Dublin	do.
Roadworks, near Hoolding Farm, Bargoed	Golligwr and Rhigos R.D.C.	W. Bevan, Surv. Dert	do.
Sewerage Works, Penygraig, Dinas, and Trioky	Rhondda U.D.C.	W. J. Jones, Surv. Council Offices, Pentre, R.S.O.	Aug. 26
Painting Work, Infirmary Buildings	Hartlepool Union	G. Kilvington, Union Offices, West Hartlepool	do.
Warehouse, Victoria Wharf, Swansea	Swansea Harb. Trust.	A. O. Schenk, Harbour Office, Swansea	do.
Concrete Footpath, New Hirst	Ashington U.D.C.	A. Wood, Surv. Ashington	do
Warehouse Alterations, Cookridge-street, Leeds	Chorley & Pickersgill, Printers	T. Winn, Archt. 90, Albion-street, Leeds	do.
Chancel Addition, &c. St. Andrew's Church, Burnley		Austin & Paley, Archts. Lancaster	do.
Police Stations, Mardy and Merthyr Vale	Glamorgan C.C.	T. M. Franklin, Council Offices, Glamorgan	Aug. 27
*Excavating Trenches, Laying Telephone Cable Pipes, &c.	Bath U.S.A.	City Surveyor, Bath	do.
Troant Industrial School, Dinas Powis	Cardiff and Barry Sch. Board	W. H. Dashwood Caple, Archt. Cardiff	Aug 28

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Sewerage Works, Kadyr	Llandaff and Dinas Powis R.D.C.	W. Fraser, 17, Queen's-chambers, Cardiff	Aug. 28
Sewers	Radcliffe U.D.C.	Council Engr. Radcliffe	do.
Broken Granite	Chesterfield U.D.C.	G. A. Busbridge, Surv. Eckington, nr. Sheffield	do.
*Judge Press House	Droylesden U.D.C.	W. Curry, Council Offices	Aug. 29
*Sewerage	Ware R.D.C.	Bailey, Denton, Son, & North Palace Chbrs. Westminster	Aug. 30
Private Street Works	Penarth U.D.C.	E. J. Evans, Surv. Council Offices, Penarth	do.
*Iron Fencing and Gates	Hendon U.D.C.	S. S. Grimsley, C'ncil Offices	do.
*Kerbing, Channelling, Tar-paving, Drainage, &c	do.	do.	do.
*Broken Ironstone Slag	do.	do.	do.
Dwellinghouse, Cutler		Jenkins & Marr, C.E. 16, Bridge-st. Aberdeen	do.
*Stoneware Pipe Drains, Inspection Shafts, &c.	William Ruddock	Pollard & Tingle, 31, Old Queen-street, S.W.	do.
Sewerage Works	Witney U.D.C.	C. Nicholson Lalley, 16, St George-st. Westminster	Aug. 31
*Sorting Office, Salisbury	Commrs. H.M. Works	13 Whitehall-place, S.W.	do.
*Collection and Disposal of House Refuse	Wandsworth B. of W.	Offices, East Hill, Wandsworth, S.W.	do.
Female Ward, &c. Bristol Lunatic Asylum, Fishponds	Com. of Visitors	H. R. Withycombe, Archt.	do.
Residence and Studio, Finshing, Falmouth	W. C. Sheppard	H. W. Collins, Archt. Penryn-st. Redruth	do.
Bank Office, Rathmines, Dublin	National Bank, Ltd.	W. Butler, 98, Mountjoy-square, Dublin	do.
Parochial Hall, Port St. Mary, Douglas	Directors	D. Lace, Hon. Sec.	do.
Detached Villa, Llanwrtyd Wells		H Teather, Archt. Andrew's Bldgs. Queen-st. Cardiff	do.
*Engine and Roller Houses, Chimney Shaft, &c. &c.	Shrewsbury Corp.	Taylor, Sons, & Crimp, 27, Gt. George-st. S.W.	Sept. 2
*Iron Socket Pipes	Bristol Waterworks Co.	Offices, Small-st. Bristol	Sept. 4
Public Baths, Leith		Mr. Simpson, Archt. Town Hall	do.
Cottage Hospital, Chippenham		F. H. Phillips, Town Clerk	do.
*Boiler House	Essex Lunatic Asylum	Superintendent. Asylum, Brentwood	Sept. 6
*Inland Revenue Office, Bolton	Commrs. H. M. Works	Office of Works, 12, Whitehall-place, S.W.	Sept. 7
*Police Cells, &c.	Gravesend T.C.	Boro' Surv.	do.
*Fodder, Brooms, Maintenance and Repairs, Street Paving	St. Luke's Vestry	Surv. Dept. Vestry Hall, City-road, E.C.	do.
*Hard Wood Paving and Concrete Foundations	Hornsey U.D.C.	E. J. Lovegrove, Southwood-lane, Highgate, N.	Sept. 13
*Stoneware Pipe Sewers, Manholes, &c and Sewering, Levelling, &c.	do.	do.	do.
*Railing and Gates	Camberwell Vestry	O. S. Brown, Vestry Hall	do.
*Light House Dwellings, &c. Lynton, Devon	Trinity House	E. G. Verity, 31, Golden-square, W.	do.
*Erection of Asylum	Lancs. Asylums Bd.	J. Beaman, Delph Farm House, Winwick	Sept. 20
*Pulling Down and Rebuilding Stores	R. T. Jolly	J. W. Dunford, 100c, Queen Victoria-street, E.C.	No date
Shop Premises, Kirkgate, Wakefield	W. H. Franklin	Golden & Kitchen, 76 Lowgate, Hull	do.
Paving, &c. Springfield Mills, Farsley	R. Gaunt & Sons	W. D. Gill, Archt. Sumtersville Tce. Stanningley	do.
Wesleyan Chapel, Church, Gresley		R. C. Clarke, Prudential Bldgs. Nottingham	do.
Jubilee Hall, Hartley Wintney		T. E. Colcutt, Archt. 36, Bloomsbury-sq. W.C.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Foreman, Roadmaking, &c.	Bishop Stortford U.D.C.	30s. per week. house, garden, and fuel	Aug. 27
*Road Foreman	Wandsworth B of W.	2l. per week to commence	Aug. 31

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p. iv.* *Contracts, pp. iv. vi. & viii.* *Public Appointments, pp. xvi. xvii. & xix.*

6,654.—Water Closets: *J. Johnson.*—Inventor claims in automatic waterclosets the opening and closing of the pan outlet by means of a rising and falling plug operated, either directly or indirectly, by a movable closet seat and a spring weight, or its equivalent, through the act of the person leaving the said seat. Also the means of opening and closing pan outlet and operating flushing cistern by such leaving of the seat and sundry modifications of details.

11,059.—Door Hinges and Supporting Tracks Therefor: *G. C. Gardner.*—Inventor claims in a hanger (suited to barn, &c., doors, as well as house doors) the combination with a roller having suitable bearing faces, of an elastic casing, formed with cup portions, anti-friction balls interposed between such cups, and bearing faces and a screw connecting such cups, and adapted to draw them towards each other; sundry modifications are described.

20,153.—Windows: *Alexander Erklin.*—In order to retain window sashes in any position and dispense with cords and weights, inventor adopts, in combination with the frame, a tension device, comprising an apertured face-plate, having a central support on its rear face, a spring and friction rollers, such device being placed in recesses in sash grooves of frame.

4,146.—Sash Locks or Fasteners: *H. D. Fitzpatrick.*—Inventor claims in a sash lock or fastener the combination with mechanism for locking a top sash against downward motion, while permitting it to move upwards, or mechanism for locking the bottom sash against upward movement while permitting it to move downwards, and means for unlocking top and bottom sashes.

NEW APPLICATIONS FOR LETTERS PATENT.

August 3.—18,046, J. Foster, Kilns for Burning Lime, &c.—18,053, J. Lemaire, Wheelbarrow.—18,092, A. Pitcher, Sash Fasteners.—18,094, R. Adams, Opening, Closing, Regulating, and Fastening at any required angle Swing Windows, Doors, Ventilators, Fanlights, &c.—18,101, R. Ewing, Earthenware and other Pipe Joints.

August 4.—18,139, A. Hibbert, Sash Tool Handle.—18,151, C. Tymon, Brick Making Machines.—18,153, J. Sullivan, Combination Door Holders.—18,162, E. Lyons, Screwdriver.—18,195, S. Haskin, Apparatus for use in Treating Wood.

August 5.—18,238, J. Cartwright and J. Baxter, Fireplaces or Grates.—18,246, F. Cummer, Manufacture of Cement.—18,274, G. Jungner, Electrically Operated Hand Tools.

August 6.—18,298, J. Williams, Chimney Cowl.—18,326, W. Jones, Window Casement Fastenings.—18,329, A. Cannon, Window Catch or Fastener.—18,364, A. Boult, Devices for Opening and Closing Windows, &c.

August 7.—18,381, E. Liley, Door Knobs or Handles.—18,391, J. Parnall, Plaster or Cement.

PROVISIONAL SPECIFICATIONS ACCEPTED.

15,572, W. Francis, Sash Fasteners.—15,726, F. James, Sash Fasteners.—15,731, R. Waugh, Sash Fastener.—15,930, F. Johnson, Window Fasteners.—15,931, R. Phillips, Sash Fasteners.—16,046, D. Roberts, Window Sash Fastener.—16,200, O. Cox and E. Angove, Sash Fasteners.—16,204, D. Jenkins, Window Sash Fasteners.—16,211, C. Huess, Sash Fastener.—16,212, R. Bardo, Sash Fasteners.—16,293, J. Jones, Window Sash Fasteners.—16,294, A. Cleverly, Sash Fasteners.—16,301, T. Bennett, Sash Fasteners.—16,452, A. Merritt, Window Fastener.—16,453, A. Thomas, Sash Fasteners.—16,457, T. Thomas, Window Fasteners.—16,498, A. Latham, Window Sash Fastener.—17,148, A. Kidd, Window Sash Fasteners.—17,150, J. Jones, Window Sash Fasteners.—17,419, N. Ashton and J. Crompton, Hydraulic Cement.—17,450, H. Lea, Electric Light Fittings.—17,612, R. McHardy and others, Door Knob Furniture.—17,617, G. Cooper, Window Sash Fastener.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

22,189, D. Davy, Baths.—23,215, G. Johnstone, Window Sashes.—27,663, G. Young, Attaching India-rubber, &c. for use as a dust and other excluder, and for other purposes.—29,839, G. Cliff, Step-ladders.—16,079, R. Gurden and H. Williams, Brick-making Machines.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

July 29.—By J. H. Bethell.

Shoreditch.—169 and 170, High-st., a building site, area 2,400 ft., f.	£4,540
Wandsworth.—30 to 38 (even), Westbury-st., f., r. 88l. 8s.	680
Greenwich.—87, Church-st., f., r. 26l.	190
Penge.—26, Laurel-grove, f., r., 26l.	220
East Ham.—2, Stafford rd., f., e.r. 26l.	270

By G. Billings.

Poplar.—67, 69, and 71, Arcadia-st., u.t. 55 yrs., g.r. 9l. 12s.	£405
Bow.—57, 59, and 61, Lamprill-st., u.t. 82 yrs., g.r. 14l. 12s. 6d.	170
Canning Town.—21 to 33 (odd), Clarkson-st., u.t. 88 yrs., g.r. 36l. 15s.	300

By H. Chapman & Co.

Fulham.—32, 36, and 38, Pownall-rd., f., r. 78l.	1,100

By Dyer, Son, & Hilton.

Lee.—37, 41, and 45, High-rd., u.t. 38 yrs., g.r. 21l., r. 205l.	2,040
New Eltham, Kent.—9 and 10, Brentwood-cottages, u.t. 47 yrs., g.r. nil	310

By Francis & Co.

Lambeth.—3, Pratt-st., f., r. 35l.	640

By Robson & Perrin.

Peckham.—Victoria-pl., a freehold mission hall and leasehold cottage adjoining, u.t. 16 yrs., g.r. 6l., r. 34l.	265

By Thole & Newman.

Kensington.—54, Drayton-gardens, u.t. 46½ yrs., g.r. 2l., r. 70l.	865
46, Pelham-st., u.t. 21½ yrs., g.r. 4l., r. 38l.	210

By Debenham, Tewson, & Co.

Clerkenwell.—36, St. John's-lane, f., r. 35l.	550

By W. Rolfe (at Masons' Hall Tavern).

Southall, Middlesex.—"The Red Lion" public-house, with an enclosure, 16 acres, u.t. 11 yrs., r. 138l. 10s., with goodwill	2,105

July 30.—By T. W. Gaze (at Diss).

Kenninghall, Norfolk.—"Postal Common Farm," 63 a. 3 r. 22 p., f. and c.	655

By Cook & Birmingham (at Exeter).

Poughill, &c., Devon.—"Penhay" and "Great Partridge Mile" and "Venn Channing" Farms," 187 a. 3 r. 21 p., f.	3,260

By T. W. Hornby (at Stockton-on-Tees).

East Hartburn, Durham.—"Green's House" Farmhouse and 28 a. 3 r. 2 p., c.	1,700
"Hill House" Farmhouse and 51 a. 3 r. 37 p., c.	1,650

By Green & Son.

Wandsworth.—Merton-rd., a plot of building land, 0a. 3 r. 21 p., f.	730

By W. Houghton.

Walthamstow.—Ringwood-rd., &c., 12 plots of building land, f.	5,187
Queen's-rd.—Two plots of building land, f.	415
83 to 111 (odd). Markhouse-rd., f., r. 351l.	4,395

Oakfield-rd., &c.—Four plots of building land, f. £475
24 to 42 (even), Oakfield-rd., f., r. 56*l.* 1,260
Chingford.—Whitehall-lane, an enclosure of land, 4 a. 3 r. 3 p., f. 900
By DOWSETT, KNIGHT, & SONS.
Ryde, Isle of Wight.—"The Theatre Royal," life-hold renewable lease, g.r. 2*l.*, fine 2*l.* 10s. 2,500
By BUCKLAND & SONS.
Camden Town.—34 and 36, St. Paul's-rd., u.t. 47 yrs., g.r. 16*l.*, r. 90*l.* 920
Westbourne Pk.—33, South-row, u.t. 85 yrs., g.r. 7*l.* 10s. 300
By EDWIN EVANS.
Twickenham.—1 and 2, Sydney-villas, u.t. 74 yrs., g.r. 21*l.*, r. 95*l.* 540
Redhill, Surrey.—Main-rd., "Crosby House" and "Park View," u.t. 71 yrs., g.r. 27*l.*, e.r. 80*l.*.. 360
By LEVENS, SON, & HOARE.
Beckenham, Kent.—3, Brackley-rd., u.t. 63 yrs., g.r. 2*l.*, e.r. 110*l.* 1,295
By G. STOCKINGS.
Leyton.—1, Thornhill-rd. and 2, Grange Pk.-rd, f., r. 63*l.* 930
Bethnal Green.—24, 25, and 26, Braemar-st., f., r. 71*l.* 10s. 680
22a, 24, 24a, and 31, Moss-st., f., r. 97*l.* 10s. 920
By TOWERS, ELLIS, & CO.
Stoke Newington.—146, Church-st., and 19 and 20, Barn-st., r. 65*l.*; also l.g.r. 5*l.*, u.t. 21½ yrs., g.r. 12*l.* 500
By F. WARMAN.
Stoke Newington.—106, Manor-rd., u.t. 77½ yrs., g.r. 11*l.*, r. 65*l.* 625
By T. B. WESTACOTT.
Kentish Town.—27, 29, and 31, Willes-rd., u.t. 24 yrs., g.r. 4*l.*, r. 120*l.* 920
By FLICK & SON.
Hanwell.—York-pl., "Vine Hurst," c., r. 22*l.* 370
"Springfield House," and "The Spring Field," 2a. 1 r. 32 p., c. 1,010
"The Broadway Stores," c., r. 42*l.* 760
Boston-rd., a corner building plot, c. 460
34, 36, 38, and 40, Lower Boston-rd., f. 1,700
Lower Boston-rd., f.g.r. 25*l.*, reversion in 83 yrs. 830
Green-lane, enclosure of land, 2a. 1 r. 33 p., f. .. 800
Chiswick.—High-rd., "The Ship at Anchor" b.-h. and 15 and 17, Essex-pl., c. 1,660
2, 4, and 6, Essex-pl., c., r. 38*l.* 6s. 450
12, 1 to 5, and 7 to 16, John's-pl., c., r. 160*l.* 1,050
9, Barrett's-cottages, c. 160
Acton.—Acton Green-parade, f.g.r. 16*l.*, reversion in 97 yrs. 500
July 31.—By Messrs. SPELMAN (at Norwich).
Cantley, Norfolk.—"The Manor House" and 543 a. 2 r. 3 p., f. 10,600
"The Oaks" and 161 a. 3 r. 3 p., f. 3,550
House and shop and four marshes, 22 a. 2 r. 39 p. f. 800
A freehold marsh farm, 41 a. 3 r. 4 p. 1,020
Enclosures of lands and three cottages, 10 a. 2 r. 23 p., f. 569
Cottages and 4 a. 2 r. 22 p., f. 316
Blacksmith's and carpenter's shops, school-house, cottage, and 5 a. 3 r. 2 p., f. 735
"The Ollands Farm," 99 a. 3 r. 17 p., f. 1,515
Various enclosures, 30 a. 2 r. 27 p., f. 781
By BACON & SONS (at Norwich).
Bridgham, Norfolk.—"The Grove" and 481 a. 2 r. 10 p., f. 4,450
A small holding, 5 a. 3 r. 15 p., f. 230
The post-office and 5 a. 0 r. 11 p., f. 185
House, ten cottages, and 2 a. 1 r. 27 p., f. 413
By I. E. KILSHAW (at Kendal).
Docker, Westmoreland.—"Tenter End Estate," also two farms and an allotment, 227 a. 2 r. 25 p., f. 9,350
Skelsmergh, Westmoreland.—"Tarn Bank" and "Little Mire" Farms, 62 a. 3 r. 25 p., f. 3,550
Kendal, Westmoreland.—Enclosures of building land, 31 a. 2 r. 35 p., f. 4,200
"Capplerigg Close," 8 a. 0 r. 2 p., f. 510
August 3.—By Messrs. COBB (at Rochester).
Cobham, Kent.—Two enclosures of land, 9 a. 1 r. 19 p., f. 300
Lower Halstow, Kent.—A fruit plantation, 0 a. 1 r. 9 p., f. 100
August 4.—By Messrs. BALLS (at Braintree).
Felsted, Essex.—"Greenfield's Farm," 37 a. 3 r. 0 p., c. 340
Fairstead, Essex.—"Great Walley Hall Farm," 121 a. 2 r. 5 p., f. 810
By REYNOLDS & EASON.
Bermondsey.—66, Bermondsey-st., f., e.r. 40*l.*.. 410
By VENTOM, BULL, & COOPER.
Battersea. — Hyde-lane, "The Hyde House Estate," 3 a. 0 r. 28 p., f. 9,800
By WINCH & SONS.
Rolvenden, Kent.—Eighteen freehold cottages.... 850
"Gibbons Wood," 16 a. 1 r. 16 p., f. 145
August 5.—By ROBERTS, SON & TORY (at Halstock).
Halstock, Dorset.—"Baker's Farm," 7 a. 1 r. 9 p., f. 300
Three closes of land, 6 a. 1 r. 24 p., f. 105
By NEWMAN & NEWMAN (at Sudbury).
Groton, Suffolk.—Enclosures of land, 24 a. 0 r. 2 p., f. 210
"Smalls Farm," 76 a. 2 r. 11 p., f. and c. 600
"The Lodge Farm," 122 a. 1 r. 21 p., f. and c... 410
Various cottages and enclosures, 66 a. 3 r. 5 p., f. and c. 1,052
"Castlings Hall Farm," 110 a. 0 r. 12 p., f. 775
By WINCH & SONS (at Cranbrook).
Cranbrook, Kent.—Turnden Hill, 9 plots of building land, 11 a. 1 r. 27 p., f. 257
"Turnden Farm," 52 a. 2 r. 9 p., f. 780
By GLASIER & SONS.
Clapham.—6 and 6a, Battersea-rise, u.t. 83 yrs., g.r. 16*l.* 13s. 4d., r. 80*l.* 620
By H. HIGGS & CO.
Charlwood, Surrey.—"Charlwood House" and 2¼ a., f. 1,700
August 6.—By SANDERS & SON (at Barnstaple).
Georgeham, Devon.—"Baggy Farm," 191 a. 2 r. 30 p., f. 5,000
By A. STEELE (at Barnard Castle).
Cotherstone, Yorks.—A farm comprising 42 a. 0 r. 3 p., f. and c. 2,000
Enclosures of land, 29 a. 2 r. 1 p., f. and c. 1,410
"East Lopes Farm," 83 a. 0 r. 32 p., f. 1,450

Barnard Castle, Durham.—Queen-st., a freehold house, r. 6*l.* £161
By COOPER & GOULDING.
Holloway.—17 and 19, Yerbury-rd., u.t. 70 yrs., g.r. 14*l.* 10s., r. 78*l.* 795
By WILLIS & CROUCH.
Hammersmith.—23, 24, and 27, Montague-st., u.t. 78 yrs., g.r. 12*l.* 10s., r. 88*l.* 12s. 650
August 7.—By DEBENHAM, TEWSON, & CO. (at Peterborough).
Sutton St. Edmund's, Lincs.—"Inkley's Farm," 172 a. 3 r. 11 p., f. 5,200
Enclosure of land, 18 a. 2 r. 5 p., f. and c. 470
By PYKE, HORNE, & POWLESLAND (at Okehampton).
Northlew, Devon.—"Horrathorne Farm," 75 a. 3 r. 3 p., f. 715
"Short's Farm," 30 a. 2 r. 10 p., f. 350
A freehold cottage and part of "Prators," 5 a. 0 r. 10 p. 164
Part of "Sanctuarys," 11 a. 3 r. 28 p., f. 661
August 9.—By F. C. TRAFFORD.
Kensington.—Minford Gardens, f.g.r., £12, reversion in 71 yrs. 355
Shepherd's Bush.—Devonport-rd., f.g.r. 18*l.* 18s., reversion in 77 yrs. 550
By HARDS & BRADLY (at Woolwich).
Charlton.—588, Woolwich-rd., u.t. 28 yrs., g.r. 10*l.*, r. 35*l.* 200
Woolwich.—1 and 2, Siemens-rd., u.t. 43 yrs., g.r. 6*l.* 8s., r. 52*l.* 315
By THORNBOROW & CO. (at Kirkby Stephen).
Brough, &c., Westmoreland.—"Lady Ing Estate," 159 a., f. and c. 4,820
Winton, "Rose Cottage," and 1 a., f. 240
"Aughill Castle" and 8 a. 1 r. 19 p., c. 650
By J. RADWAY (at Swindon).
Lydiard Millicent, Wilts.—"The Home Farm," 62 a. 3 r. 36 p., f. 900
By CASTIGLIONE & GIBBINGS (at Carlisle).
Dalston, &c., Cumberland.—"The Dalston Hall Estate," 1,562 a. 2 r. 33 p., f. (in lots)..... 39,835
August 10.—By DEBENHAM, TEWSON, & CO.
Whitchurch, Oxon.—"Walliscote House" and 41 a. 1 r. 12 p., f. 11,600
Norwood.—Jasper-rd., "Ranger House," u.t 62½ yrs., g.r. 1*l.* 6s. 6d., r. 50*l.* 440
36 and 38, Jasper-rd., u.t. 62½ yrs., g.r. 24*l.*, r. 80*l.* 585
Leytonstone.—144 and 146, Ashville-rd., u.t. 83½ yrs., g r. 7*l.* 13s. 220
By BELTON & SONS (at "Masons' Hall Tavern").
Streatham Common.—"The Greyhound" p.-h., with stabling and shop adjoining, u.t. 71½ yrs., r. 152*l.*, with goodwill 45,000
Norwood.—Farley-rd., "The Queen's Arms" p.h., u.t. 70 yrs., r. 125*l.*, with goodwill 15,500
By F. W. BULL (at "Masons' Hall Tavern").
New Cross.—325, New Cross-rd. (off-licensed premises), u.t. 20½ yrs., r. 170*l.*, with goodwill .. 3,570
By FLEURET, SONS, & ADAMS (at "Masons' Hall Tavern").
St. George's, East.—St. George-st., "The Half Moon and Seven Stars" p.-h., f., r. 70*l.* 3,350
By T. BANNISTER (at Hayward's Heath).
Cuckfield, Sussex.—North and South Hall Farms, 60 a. 1 r. 23 p., f. 760
Enclosures of land, 72 a. 0 r. 15 p., f. 1,070
By GEORGE SYMONDS (at Ipswich).
Clopton, Suffolk.—A freehold farm, area 84 a. 0 r. 28 p. 505
August 11.—By BREADMORE & WEBB.
Regent's-pk.—8, 9, 21, and 22, Culworth-st., u.t. 30½, g.r. 32*l.*, r. 170*l.* 1,255
By MATTHEW MILES (at Winchester House).
Somer's Town.—Clarendon-st., "The Neptune" p.-h., f., r. 80*l.* 10,550

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	£ s/£ s
Teak, E.I....	load	10/20/0 15/12/0
Sequoia, U.S.R.cu.		1/8 1/10
Ash, Canada load		3/5/0 4/10/0
Birch, do.		4/5/0 6/0/0
Elm, do.....		4/0/0 5/5/0
Fir, Dantzic, &c..		2/5/0 4/5/0
Oak, do.....		2/10/0 3/10/0
Canada		3/10/0 6/10/0
Pine, Canada red		2/0/0 0/0/0
Do. Yellow		2/0/0 4/0/0
Lath, Dantzic, 8th		4/10/0 5/10/0
St. Petersburg..		5/0/0 6/10/0
Wainscot, Riga, &c., log		2/10/0 3/15/0
Odessa, crown....		1/10/0 3/15/0
Deals, Finland and 1st std 120		8 0/0 8 10/0
Do. 4th & 3rd...		8/0/0 8/10/0
Da. Riga		6 10/0 7/10/0
St. Petersburg, 1st yellow. . .		10/0/0 12/10/0
Do. 2nd yellow		9/0/0 10/0/0
Do. whites		8/10/0 10/10/0
Swedish		9/0/0 15/10/0
White Sea.....		9/10/0 16/0/0
Canada, Pine 1st		20/10/0 26/10/0
Do. do. 2nd		15/0/0 17/10/0
Do. do. 3rd, &c.		7/10/0 11/0/0
Do. Spruce, 1st.		10/10/0 12/0/0
Do. do. 2nd and 3rd		8 0/0 9/0/0
New Brunswick		9/10/0 11/0/0
Battens, all kinds		5 0 0 0 0/0
Flooring boards, 1st, 1 in. prep.		0 8.6 0 9/3.6
2nd		0 7/0 0 8/0.0
Do. 3rd		0 5/0 0 6/0.0
Other qualities—		0 4/0 0 5/0.0
Cedar, Cuba, ft.		/4 /4½
Honduras, &c.		/4 /4½
Mahogany, Cuba		/5 /8½
St. Domingo, cargo av.		/4½ /5
Mexican, do. do.		/3½ /5
Tobasco, do. do.		/4 /7
Honduras, do.		/5 /8½
Box, Turkey, ton		4/0/0 25/0/0
Rose, Rio.....		5/0/0 12/0/0
Bahia		4/0/0 12/0/0
Satin, St. Domingo		0/0.6 0/0.0

TIMBER (*continued*).

Satin, Porto Rico	ton	£ s/£ s
Walnut, Italian...		0/0/3 0/0/7

METALS.

Iron—Pig, in Scotland	ton	£ s/£ s
Bar, Welsh, in London.....		5/15/0 5/17/6
Do. do. at works in Wales		5/10/0 5/12/6
Do. Staffordshire, in London.....		6/5/0 7/10/0
COPPER—British cake and ingot		52/0/0 52/10/0
Best selected ..		52/10.0 53/0/0
Sheets, strong..		58/0/0 59/0/0
Chili bars		49/0/0 0/0/0
YELLOW MTL lb.		4½d. 5d.
LEAD—Pig Spanish ....ton		£ s/£ s
English		12/12/3 12/13/9
Sheets		12/13/9 13/16/3
Shot, English 6 lbs. per sq. ft. and upwards ..		13/18/9 0/0/0
Pipe.....		14/8/9 0/0/0
ZINC—English sheet.....ton ..		22/5/0 0/0/0
Vieille Montagne		21/5/0 0/0/0
Spelter		17/0/0 17/5/0
TIN—Straits		62/18/9 0/0/0
Australian.....		62/17.6 63/7/6
English Ingots.		65/0/0 66/0/0
Banca.....		62/0/0 0/0/0
Billiton		59/15/0 60/0/0

OILS.

Linseed .....ton		£ s/£ s
Cocoanut, Cochin		17/15/0 0/0/0
Do. Ceylon		14/6/0 0/0/0
Palm, Lagos.....		24/10/0 0/0/0
Rapeseed, English pale		27/10/0 27/15/0
Do. Brown		27/0/0 27/10/0
Cottonseed ref. ..		25/17/6 26/10/0
Olein.....		28/10/0 29/10/0
Lubricating U.S.		0/6/3 0/7/6
Do. black		0/4/6 0/6/0
TAR—Stockholm barrel		20/0 0/0/0
Archangel.....		0/19/6 0/0/0
Turpentine.....		20/10/0 22/12/6

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender: and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

BEXHILL-ON-SEA.—For building proposed mansion, "Westwood," Bexhill-on-Sea, for Sir Edward Maler, G.C.B. Mr. G. Herbert Gray, architect, Bexhill-on-Sea. Quantities by Mr. Sydney Saker, 37, Havelock-road, Hastings:—

C. Bowden	£10,373 13	H. E. Cruttenden	£8,595 0
Barker & Rogers	8,800 0	Moone & Garnar	8,589 0
Eldridge & Cruttenden	8,675 0	Martin	8,490 0
Padgham & Hutchinson	8,620 0	A. H. White, St. Leonards*	8,483 0

* Accepted.

BISHOP AUCKLAND.—For the erection of six houses, Cockton Hill, for Mr. J. Kent. Mr. F. H Livesey, architect, Market-place, Bishop Auckland:—

Masonry, Bricklaying, Joinery, and Plastering—R. Blackett, Bishop Auckland*	£1,828 0 0
Slating—R. Mascall, Bishop Auckland*	154 15 6
Plumbing—Sykes & Co., Darlington*	175 0 0
Painting and Glazing—M. Johnson, Bishop Auckland*	41 10 0
Whole Tender—J. Mancey.....	2,273 3 6
Whole Tender—T. Manners	2 413 0 0
Whole Tender—R. Burlinson.....	2,663 0 0
Masonry—G. H. Bell	2,232 0 0
Plastering—S. Kirby	176 0 0
Joinery—L. M. Dennis	531 13 0
Joinery—J. Braithwaite & Son	562 0 0
Joinery—W. Hudson	652 18 5
Ironmongery—E. Thompson.....	186 0 0
Ironmongery—W. Kilburn.....	195 10 0
Painting—F. Caldeleugh	46 2 4
Painting—R. Thompson.....	44 10 0
Painting—T. Pallisser	49 16 0

* Accepted.

BLACKBURN.—For alterations to Infirmary, sanitation of wards Nos. 2 and 10, for the Board of Management. Messrs. Simpson & Duckworth, architects, Richmond Chambers, Blackburn:—

Jno. Catterall.....	£413 0 0	W. H. Law	£366 2 6
Jas. Parker	367 0 0	Wm. Edmundson	350 0 0
J. Fecit & Sons	316 0 0	T. P. Wilson & Sons, Blackburn*	342 0 0
Jas. Sharples	370 0 0		

* Accepted.

BRIERLEY HILL.—For erecting a Primitive Methodist Church. Quantities by the architects, Messrs. Hickton & Farmer, Walsall:—

Guest	£1,583 10	E. A. Horton, Brierley Hill*	£1,538 0
Hammonds.....	1,580 0	E. Seckerson.....	1,450 0
Dallow	1,567 0	H. Dorse & Co.	1,450 0
Bishop & Son.....	1,556 0		
Brookes & Tandy	1,550 0		

* Accepted.

BRIGHTON.—For alterations to the buildings of the Municipal School of Art, Grand Parade, for the Town Council. Mr. F. J. C. May, C.E., Town Hall, Brighton:—

F. A. Knight & Co. £4,761 17 10		Suttin & Evershed, Brighton*	£4,098 0 0
J. Longley & Co. ...	2,350 0 0		
W. A. Field & Co...	2,254 0 0		

* Accepted.

BRIDGETOWN.—For erecting a Primitive Methodist Chapel at Bridgetown, for the Trustees. Quantities by Messrs. Hickton & Farmer, architects, Walsall:—

William Wistance	£895 0	Thomas Mason.....	£722 15
S. Wootton	889 0	Albert Williams, Great Wyrley*	719 13
R. Merton Hughes.....	882 0	William Ingram	668 0
John Reynolds.....	825 0		
M. B. Anderson.....	735 0		

* Accepted.

CARLISLE.—For additions to the Cumberland Infirmary, for the Building Committee. Messrs. Woodd & Ainslie, architects, Bond's Sanctuary Chambers, Westminster, S.W. Quantities by Mr. J. Albrighton, Ashton-on-Ribble:—

Beaty Bros.	£1,605	J. & R. Bell*	£1,453
John Laing	1,583	W. & H. Davidson	1,422

* Accepted.
[All of Carlisle.]

CHICHESTER.—For additions and alterations at the school, Bishop Otter College, for the Committee. Mr. Gordon P. G. Hills, architect, 4, Adam-street, Adelphi, London:—

J. Longley	£520	J. O. Holt*	£478
A. W. Johnson	500		

* Work modified and contract concluded for £429.

CLACTON-ON-SEA.—For the erection of a block of shops, &c., Wellesley and Carnarvon-roads, for Mr. Joseph Newman. Mr. Jas. W. Martin, architect, Station Chambers, Clacton-on-Sea:—

J. W. Dixon	£3,714	Ernest West.....	£3,198
Myall & Ellis	3,300	H. & G. Linsell	3,080

DARTFORD.—For extending the rain-water reservoir, laying storm-water drain, and forming absorbing pond at the Gore Farm Hospital, near Dartford, Kent, for the Metropolitan Asylums Board. Messrs. A. & C. Harston, Architects, 15, Leadenhall-street, E.C.:—

Leslie & Co., Ltd.	£2,500	J. Dickson.....	£1,69
Shillitoe & Son	2,020	A. T. Catley, 23, Lloyd-square, W.C.*	1,500
Pedrette & Co.	2,097		
Osenton & Co.	1,889		

* Accepted.

DURHAM.—Accepted for the erection of Catholic schools. Mr. Chas. Walker, architect, 26, Eldon-square, Newcastle:—
J. Caldcleugh, Durham City £3,604

HARROW.—For an extension of the present ham factory at Harrow, for Messrs. J. Adamson & Co. Messrs. Johnstone Bros., architects, 59, Lowther-street, Carlisle:—

F. F. Chinchen	£2,892 0 0	J. Chessum & Sons	£2,372 0 0
G. Wilkinson & Son	2,895 0 0	T. Turner, Ltd.....	2,297 0 0
W. Reason	2,710 0 0	Seth Grist, Ltd., Aylesbury*	2,178 0 0
G. Waggs	2,448 17 9		
Spiers & Son	2,432 0 0		

* Accepted.

LONDON.—For structural alterations and addition to No. 3, Brewer-street, Clerkenwell, E.C. Messrs. H. Saunders & Son, architects:—

E. A. Roome.....	£645 0	Kiddle & Son	£575 0
W. Gladding	642 0	W. Reason*	569 10
F. W. Millman	617 0		

* Accepted.

LONDON.—For rebuilding orphanage at Holly-place, Hampstead. Mr. G. Sherrin, architect:—

Reason	£2,408	Faulkner	£2,253
Harris & Wardrop	2,350		

LONDON.—For the erection of a steam laundry and stabling, Finsbury Park, N. Mr. R. Midworth, architect, Bank Chambers, Finsbury Park. Quantities by Messrs. J. E. Goodchild & Son, 81, Finsbury-pavement :—

Lavington	£2,565	Stevens	£2,080
Kirby	2,545	Lidstone	1,997
Lascelles	2,480	Lown	1,990
Mattock	2,083	Hunt	1,960
Wilkinson	2,070	Pavey (accepted)	1,799

LONDON.—For fitting up the kitchen department of the Western Hospital, Seagrave-road, Fulham, S.W., for the Metropolitan Asylums Board. Messrs. A. & C. Harston, Architects, 15, Leadenhall-street, E.C. :—

Clements, Jeakes, & Co.	£1,810	T. W. Brooke	£1,056
Benham & Sons, Ltd.	1,492	Moorwood, Sons, & Co., 15, Southampton-row, W.C.*	997
Bum Bros	1,332		
J. & F. May	1,290		

* Accepted.

LONDON.—For the erection of boundary walls, fences, and gates, at the site of the Tooting Bec Asylum, for the Metropolitan Asylums Board. Messrs. A. & C. Harston, Architects, 15, Leadenhall-street, E.C. No quantities :—

Thos. Gregory & Co.	£3,459	McCormick & Sons, Northampton-street, Essex-road, N.*	£3,979
W. Johnson & Co., Lim.	3,398		

* Accepted.

LONDON. — For rebuilding the "Artichoke" public-house, Jubilee-street, E., for Mr. Walter Martin. Mr. Ernest H. Abbott, architect, 6, Warwick-court, High Holborn, W.C. Quantities by Mr. Alfred Johnson, 30, Imperial-buildings, Ludgate-circus, E.C. :—

John Apley	£1,482 0 0	W. Antill & Co.	£1,359 0 0
Hall, Beddall, & Co.	1,465 0 0	A. E. Symes	1,324 0 0
Robert Eddie	1,428 0 0	T. Wentner Smith & Son	1,276 0 0
Alfred Fordham	1,419 3 8	T. Russell	1,198 9 0
Samuel Salt	1,350 0 0		

LONDON.—For the rebuilding of the "Duke's Motto" public-house, Jubilee-street, Whitechapel, E. for Mr. Walter Mazin. Mr. Ernest H. Abbott, architect, 6, Warwick-court, High Holborn, W.C. Quantities by Mr. Alfred Johnson, 30, Imperial-buildings, Ludgate-circus, E.C. :—

John Apley	£1,510 0	W. Antill & Co.	£1,375 0
Hall, Beddall, & Co.	1,490 0	A. E. Symes	1,349 0
Robert Eddie	1,468 0	T. Wentner Smith & Son	1,297 0
Alfred Fordham	1,457 7	T. Russell	1,226 4
Samuel Salt	1,423 0		

POCKLINGTON (Yorks).—Accepted for additions, &c., to the grammar school. Messrs. Demaine & Brierley, architects, 13, Lendal, York :—

Brick and Stone Work, and Carpentering and Joinery.—T. S. Ullathorne, Millgate, Selby	£4,364 2 3
Slating.—Sharp & Harper, Bath-road, Waterlane, Leeds	283 12 0
Plastering.—Johnson & Sons, Mirfield, Yorks.	378 18 0
Plumbing and Glazing.—Hy. Hopkins, Petergate, York	666 0 0
Painting.—Bellerby & Son, Petergate, York	95 0 0
	£5,687 10 3

RHAYADER (Radnorshire).—For the erection of a church, Garreg-ddu, Elan Valley, for the Birmingham Corporation. Mr. S. W. Williams, architect, Rhayader. Quantities by architect :—

E. Davies & Son	£1,895 10	T. Lant, Rhayader*	£1,548 0
Morgan Lloyd	1,793 10		

* Accepted.

STOURBRIDGE.—For erecting an infant school, Careless Green, Stourbridge, for the Wollescote School Board. Messrs. J. H. Hickton & H. E. Farmer, architects, Walsall :—

Bishop & Son	£3,233	Dorse & Co.	£2,659
C. A. Horton	3,096	T. Green	2,627
J. Meredith	2,765	J. P. Bloomer	2,626
T. Tildesley	2,770	J. Guest & Sons, Brettell-lane*	2,575
J. Dallow	2,750		
Brooks & Tandy	2,725		

* Accepted.

TAUNTON.—For the erection of six almshouses, St. James'-street, for the Trustees of the Taunton Town Charity. Mr. J. Houghton Spencer, architect, 8, Hammet-street, Taunton :—

F. W. Rowsell	£1,275 16 0	G. H. Pollard	£1,125 0 0
H. J. Spiller	1,270 0 0	J. Morse	1,124 0 0
A. J. Spiller	1,245 13 6	T. Manning	1,120 0 0
H. S. Cook	1,240 0 0	T. Moggridge, Taunton (accepted)	1,070 10 0
G. Handford	1,126 0 0		

WALSALL.—For the erection of a factory in Marsh-street, Walsall, for Messrs. Taylor, Son, & Whitehouse. Quantities by Messrs. Hickton & Farmer, architects, Walsall :—

Robert Harris	£2,880	R. Merton Hughes	£2,781
Alfred Lynex	2,809	Wm. Kendrick, Walsall*	2,744
William Wistance	2,792		

* Accepted.

WALSALL.—For erecting two houses in Westbourne-road, Walsall, for Mrs. Hickton. Messrs. Hickton & Farmer, architects, Walsall :—

W. H. Mallin	£820 0 0	Hammonds Bros.	£780 0 0
W. Lees	815 0 0	J. Wilkes	778 0 0
W. T. Lees	810 0 0	A. T. Brooker, Walsall*	759 22 6
R. Harris	797 0 0		

* Accepted.

WATFORD.—For the erection of a new copper house and sundry engineering work at the Brewery, Watford, for Messrs. E. J. & C. Healey, Limited. Messrs. Scamell & Colyer, brewery engineers and architects, 18, Great George-street, Westminster, S.W. Quantities by Messrs. R. L. Curtis & Sons, 119, London Wall, E.C. :—

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